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**ABSTRACT** Presented are listings of solar-related courses, programs, and curricula at about 700 post-secondary institutions nationwide. Included under each institutional entry are separate listings of courses or programs. Each course or program description includes: (1) the instructor and his telephone number; (2) course number; (3) department responsible for the course, program or curriculum; (4) credits; (5) student level; (6) duration; (7) contact hours by class and laboratory time; (8) principal topics covered; (9) number of times taught; and (10) average enrollment. (FE)

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January 1979

Department of Energy  
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ED-173186

# National Solar Energy Education Directory

## First Edition

In cooperation with the office of  
U.S. Congressman George E. Brown, Jr.,  
John Kimball, Staff Assistant, and  
the Congressional Solar Coalition

Prepared by

George Corcolectes  
Katherine Kramer  
Kevin O'Connor  
Jo Ann Silversmith

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SERI/SP-42-141  
UC CATEGORY: UC-13

NATIONAL SOLAR ENERGY EDUCATION DIRECTORY  
FIRST EDITION  
JANUARY 1979

IN COOPERATION WITH THE OFFICE OF  
U.S. CONGRESSMAN GEORGE E. BROWN, JR.,  
JOHN KIMBALL, STAFF ASSISTANT,  
AND THE  
CONGRESSIONAL SOLAR COALITION

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**Solar Energy Research Institute**

1536 Cole Boulevard  
Golden, Colorado 80401

A Division of Midwest Research Institute

Prepared for the  
U.S. Department of Energy  
Contract No. EG-77-C-01-4042

PRODUCED FROM THE  
SOLAR ENERGY INFORMATION DATA BANK

\* \* \* \* \*

ACKNOWLEDGEMENTS

The preparation of this report was accomplished by a combined effort of many people. In the Academic Programs Branch, Kevin O'Farrell had overall project management responsibility and served as the contact person with John Kimball who coordinated the survey effort from U.S. Congressman Brown's Office. George Corcofeyotes, Academic Programs, had overall responsibility for data collection. He was responsible for receiving, reviewing and editing the survey returns.

Jo Ann Silversmith, Katherine Kramer, SPIRES consultants, and the staff of the Database Systems Branch designed and built the computerized database, supervised the data input, and provided technical assistance.

**FOREWORD**

The production of the "1978-79 National Solar Energy Education Directory" (NSEED) represents the culmination of a project initiated in June of 1978. At the Solar Energy Research Institute (SERI), a need for an Educational Data Base (EDB) has been established. The created EDB becomes part of the Congressionally-mandated Solar Energy Information Data Bank (SEIDB).

SERI, having learned from John Kimball of the Office of U.S. Congressman George E. Brown, Jr., that they were planning a National survey of post-secondary educational institutions, agreed to become the survey information processing agent for the sponsoring organizations - Congressman Brown's Office and the Congressional Solar Coalition. Approximately 8,000 surveys were mailed to some 3,200 educational institutions in July of 1978. This Directory, along with information from other noted sources, represents information placed in the data base as of December, 1978.

We hope you find the Directory useful. We will appreciate your brief evaluation of the Directory by returning the User Evaluation Sheet on page xviii of the Directory.

1978-79 NATIONAL SOLAR ENERGY EDUCATION DIRECTORY

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## USE AND INTERPRETATION OF THIS DIRECTORY

**IMPORTANT NOTICE:** Several important points need to be understood by the user of this Directory. The information contained in the Directory is derived from responses to a national survey of all post-secondary educational institutions. Its completeness is based on those responses and the secondary sources utilized as noted on page ix. The accuracy and reliability of the information is based on those responses and, in some cases, our best judgement on data interpretation. This is a first effort. While we feel the information should be useful to many, we know the next Directory will be more complete and accurate. Should individuals desire additional information relative to activities of particular institutions, they should call or write the institutions.

**DIRECTORY ORGANIZATION:** The organization of the directory lists institutions alphabetically by institution type within state. A complete alphabetical index of institutions is found in the back of the Directory along with a cross reference to program and curriculum titles. Within each institution, programs and curricula offered, if any, are listed following the institution name, ID number (found in parentheses to the right of the institution name), address and phone number. All solar-related courses are then listed alphabetically by course title. If a course is offered within a program or curriculum, the program or curriculum name with which it is associated is printed.

Institution names and addresses for mailing labels and for creating the initial computerized data base were obtained from the National Center for Education Statistics. Approximately 8,000 surveys were mailed to some 3,200 educational institutions. Of these, some 2,100 institutions responded. Over 600 institutions indicated offering at least one solar-related course. Over 125 educational institutions indicated offering a program or curriculum. By combining the survey responses with secondary sources of information (courses, programs, or curricula marked by an "\*") the Directory contains entries for nearly 700 institutions.

**EDITING NOTES:** In the compilation of the directory of post-secondary educational institutions offering solar-related courses, programs and curricula, every reasonable effort

was made to obtain accurate and reliable information. Both phone calls and follow-up mail requests were used to gather additional information where necessary. Where information was difficult to interpret, and contact was not made with the respondent, a best judgement of the data submitted was entered into the file. Every survey instrument was read, coded and edited. In order to conform with character limitations in certain fields, some responses were abbreviated.

Specific data element responses were examined for consistency with other data elements, e.g. Did the total contact hour field represent the sum of the subfields of contact hours? In some cases, interpretations were made relative to the program/curriculum classification (page xii defines program and curriculum). The most common judgements which were made concerned the question of solar-related courses. With a slight stretch of interpretation, an institution could develop a long list of "solar-related" courses. Hence, some courses submitted which appeared only remotely related to solar were not included in the directory. In future updates, a solar-related course is defined as one in which at least one-third of the contact hours are spent teaching direct solar-related topics.

Probably the most difficult question to interpret on the survey was question 11 on the first page of the survey (see page xiii). The question reads: "Students completing the Program/Curriculum would generally be classified as...". While the attempt of this question was to elicit responses relative to the expertise obtained by the students as a result of completing the program or curriculum, the responses very often reflected the kinds of students involved in the program or curriculum. Therefore, in the Directory we have named the responses to the question with the heading "Students Taking or Completing Offering".

Institutions which only had planned courses, programs, or curricula were not included in the Directory. Relative to course topic information, only those topics taught extensively were listed in the course details.

DIRECTORY UPDATE: As the Directory is used, data errors and omissions will be noted. If errors in the reported records are found, the pages may be copied and returned to SERI with corrections noted. If additional

programs, courses, and/or curricula should be included, the survey form on pages xiii - xv may be copied and completed. Return changes, additions, or deletions to:

Solar Energy Education Data Base  
Attn: George Corcoleotes  
Solar Energy Research Institute  
1536 Cole Boulevard  
Golden, Colorado 80401

For questions concerning updates call SERI at (303) 231-1831.

### SECONDARY SOURCES UTILIZED

In addition to the responses received from the initial survey, several sources of information were utilized to make the data base more complete. Each entry derived from secondary sources has been "starred" (\*) to call attention to the user that the information provided for that institution has been derived from a source other than the primary survey.

Institutions and organizations which appear in the Directory as having information supplied from secondary sources are encouraged to submit complete information on their educational offerings by completing a copy of the Survey Response Form found on pages xiii - xv.

Following is a list of secondary sources utilized in the compilation of the Directory:

1. Alternative Sources of Energy, Nos. 21 & 31, Rt. 2, Milaca, MN 56353.
2. California Educational Opportunities for Solar Energy and Energy Conservation at Institutions of Higher Education. U.S. Congressman George E. Brown, Jr., 2342 House Office Building, Washington, D.C. 20515.
3. Colleges and Universities with Solar-Related Courses, Mid-American Solar Energy Complex, 1256 Trapp Road, Eagan, MN 55121.
4. HUD Solar Status--A Special Report, September 1978, U.S. Department of Housing and Urban Development, Washington, D.C. 20410.
5. Illinois' Solar Energy Education Program Directory, 1977-79, University of Illinois, Urbana, Illinois 61801.
6. National Solar Heating and Cooling Information Center, P.O. Box 1607, Rockville, MD 20850.
7. Report from California, California Community Colleges, November 2, 1978, Barbara S. Pratt, California Community Colleges, 1238 "S" Street, Sacramento, CA 95814.

8. Solar Action Office, One Ashburton Place, Boston,  
MA 02108.

9. Solar Energy Source Book, Christopher W. Martz,  
Solar Energy Institute of America, 1110 6th  
Street, NW, Washington, D.C. 20001.

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P.O. Box 71  
RIVERSIDE, CALIFORNIA 92502  
(714) 686-8863

WASHINGTON OFFICE

FIRST NATIONAL SOLAR ENERGY EDUCATION SURVEY

July, 1978

TO: Presidents of Educational Institutions, Institute Heads, Deans and Department Directors offering Educational Programs in Solar Energy

FROM: U.S. Rep. George E. Brown, Jr.  
U.S. Rep. James M. Jeffords  
U.S. Rep. James J. Blanchard

U.S. Senator Charles H. Percy  
U.S. Senator Thomas J. McIntyre

The Congressional Solar Coalition is interested in your participation in a cooperative effort to create a data base of all solar energy-related programs and courses currently being offered by our nation's post-secondary educational institutions.

Two organizations have agreed to work with the collected information. The Solar Energy Research Institute (SERI) in Golden, Colorado will have responsibility for the creation of a computerized data base which will become part of the legislatively mandated Solar Energy Information Data Bank (SEIDB). SERI's Information Systems Branch will receive the survey returns, edit and process the data into a computerized data base, and create the appropriate retrieval, reporting, updating, and analysis mechanisms. The compilation of collected material will be made available in a published Solar Energy Educational Directory. As an interim measure, before the computerized data base at SERI is fully operational, the National Solar Heating and Cooling Information Center (NSHIC) will have the capability of providing a listing of solar educational offerings on a state-by-state basis free of charge to anyone by calling their toll-free number: (800) 523-2929.

The suggested deadline for returning the survey is September 15, 1978. For the purpose of this survey, wind, biomass conversion, and ocean thermal energy conversion should also be considered as solar technologies. New courses, curricula, and updates will be accepted any time following the September 15th date. However, this is not preferred. Even if you do not offer solar courses, please complete and return the first page of the form.

We appreciate your participation and, for your help, the Solar Energy Research Institute will be sending you a listing of the programs in your state. We hope you will be able to use the compiled information for your own course and/or curriculum development.

We would also like to use this opportunity to make sure that you are aware of the Higher Education Act Amendments of 1976. Of particular importance is an amendment introduced by Sen. Thomas J. McIntyre, (N.H.), that allows Federal Funds to be used for solar education programs in post-secondary vocational education schools. You might want to investigate your own possible uses of federal funds for the development of new or additional solar energy curricula.

THIS STATIONERY PRINTED ON PAPER MADE WITH RECYCLED FIBERS

## **Solar Energy Educational Survey Instructions**

If your institution is not offering any solar related programs, please complete only the first page of the survey, so indicating. If solar offerings are made by your institution, we would be happy to receive any additional information which you feel would be helpful.

The three-page survey form is designed to elicit information on solar-related programs, courses, and/or curricula currently being offered or planned to be offered by educational institutions. Your assistance in making the form entries as complete as possible will be greatly appreciated. There are two sections to be completed: (1) Educational Institutions and (2) Course Information (2 pages). Some detailed instructions may help in answering certain questions. Note that for the purpose of this survey wind, biomass conversion, and ocean thermal energy conversion should also be considered as solar technologies.

### **I. Educational Institutions**

Q. 4. If your institution offers or plans to offer a solar curriculum or program, answer "yes" to question 4 and complete questions 5 through 12 for each curriculum or program offered or planned. Duplicate the form if necessary.

Q. 5-12. In questions 5 through 12, information relative to solar curricula and programs is requested, as distinguished from single course offerings. A curriculum is a set of integrated courses leading toward a degree or certificate. A program is loosely defined as a formal academic experience usually combining course-work and research in applied solar technology, but not necessarily leading to a degree in solar expertise. Specialized summer programs and research institutes are examples. The answer to Q. 8, Head of Prog./Curr., should be the main contact person for someone desiring more information about the program or curriculum. Question 12 estimates the proportion of students successfully placed in solar-related jobs.

Q. 13-14. Please answer question 14, regardless of the answer given in question 13. If your institution is presently offering solar courses ("Yes" to question 13), it may also be developing additional courses.

### **II. Course Information**

Please complete the Course Information Section (2 pages) for each separate, solar-related course, either presently offered or planned to be offered. Duplicate the Course Information Section if necessary to cover all solar courses offered. Any questions you may have concerning the survey form may be answered by George Corcoleotes at SERI (303) 231-1831 or Kevin O'Connor 231-1825.

SERI, Academic Programs  
Attn: George Corcoleotes  
1536 Cole Boulevard  
Golden, Colorado 80401

**Thank you very much for your participation.**

## I. Educational Data Base — Educational Institutions

1. Institution Name \_\_\_\_\_

2. Address: \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

3. Institution Type

4 Yr. Coll./Univ./Grad. School  
 Community/Junior College

Vocational/Technical School  
 Other (describe) \_\_\_\_\_

4. Does your institution offer/plan a Solar Curriculum or Program? Yes  No   
If "No", go to Question 13

Please complete Questions 5-12 for each solar energy Curriculum or Program offered or planned. If more than one Program/Curriculum is offered/planned please make copies of this section and attach.

5. Is the offering a Program?  Currently Offered?  or Planned?   
or Curriculum?  Currently Offered?  or Planned?

6. Program/Curriculum Name \_\_\_\_\_

7. College/Dept. offering Program/Curriculum \_\_\_\_\_

Phone: (\_\_\_\_\_) \_\_\_\_\_

8. Head of Prog./Curr. \_\_\_\_\_

9. What Degree/Title/Certificate, if any, does graduating student receive?

Ph D     MA     MS     BA     BS     Associate Degree     None  
 Other (specify) \_\_\_\_\_

10. Name of Degree/Title/Certificate \_\_\_\_\_

11. Students completing Program/Curriculum would generally be classified as (check as many as apply)

<input type="checkbox"/> Architect	<input type="checkbox"/> Solar System Installer
<input type="checkbox"/> Educator	<input type="checkbox"/> Residential
<input type="checkbox"/> Researcher	<input type="checkbox"/> Industrial/Commercial
<input type="checkbox"/> Solar Engineer	<input type="checkbox"/> Solar Technician — one trained in instrumentation, controls, design, maintenance, etc.
<input type="checkbox"/> Mech/Elec Contractor	<input type="checkbox"/> Person specializing in solar from one of the following trades/skills
<input type="checkbox"/> General Contractor — Specializing in solar design/installation	<input type="checkbox"/> Electrical <input type="checkbox"/> Plumbing <input type="checkbox"/> Sheet Metal
<input type="checkbox"/> Do-it-yourselfer/Homeowner	<input type="checkbox"/> Other (specify) _____
<input type="checkbox"/> Other (specify) _____	

12. Estimate what percentage of graduates of the above Prog./Curr. enters the job market in the field for which they are specifically trained \_\_\_\_\_%

13. Is your institution presently offering solar courses? Yes  No

14. Are any (additional) solar courses being developed? Yes  No

For all courses, existing or planned, please complete the 2-page Course Information Section. Make extra copies of the section if needed. If no solar-related courses are offered or planned, complete this page only and return.

Thank you very much.

## II. Educational Data Base — Course Information

1. Name of Institution \_\_\_\_\_
2. Course Title \_\_\_\_\_
3. Course Number \_\_\_\_\_ 4. Is Course Currently Offered?  Or Planned?
5. Course Instructor/Contact \_\_\_\_\_ Phone ( ) \_\_\_\_\_
6. College/Dept Offering Course \_\_\_\_\_
7. Is Course also taught in conjunction with other Colleges/Depts? Yes  No
8. Most of the students in course are from What Colleges/Depts? (Please List)
 

a. _____	b. _____	c. _____
d. _____	e. _____	f. Don't Know <input type="checkbox"/>
9. Number of Times Course Taught to Date \_\_\_\_\_ 10. Average Enrollment \_\_\_\_\_
11. Number of Students Completing Course
 

1973 or earlier	1974	1975	1976
1977	1978 (est)	1979 (est)	
12. Is Course Offered for Academic Credit? Yes  No  13. # Credit Hours \_\_\_\_\_
14. Typical Academic Level of Student Taking Course All Levels 

High School Grad. <input type="checkbox"/>	Fresh/Soph <input type="checkbox"/>	Jr/Sr <input type="checkbox"/>	College Grad <input type="checkbox"/>	Postdoctoral <input type="checkbox"/>
--	-------------------------------------	--------------------------------	---------------------------------------	---------------------------------------
15. Duration of Course (# of Weeks \_\_\_\_\_ Hrs/Week \_\_\_\_\_) OR (# of Days \_\_\_\_\_ Hrs/Day \_\_\_\_\_)
16. Contact Hours Total \_\_\_\_\_ Classroom Lecture \_\_\_\_\_ Laboratory \_\_\_\_\_  
On-the-job-training \_\_\_\_\_ Other \_\_\_\_\_ (Specify) \_\_\_\_\_
17. To what extent are the following topics covered in your course? Check only those that apply. Please specify topics not listed, but included in the course.

Extensively Somewhat	Extensively Somewhat	Extensively Somewhat
<b>Course Topics</b>		
<input type="checkbox"/> <input type="checkbox"/> 1 Alternate Energy Sources	<input type="checkbox"/> <input type="checkbox"/> 21 Solar Systems Design	
<input type="checkbox"/> <input type="checkbox"/> 2 Appropriate Technology	<input type="checkbox"/> <input type="checkbox"/> 22 Solar Systems Installation	
<input type="checkbox"/> <input type="checkbox"/> 3 Biomass Conversion	<input type="checkbox"/> <input type="checkbox"/> 23 Solar Systems Maintenance	
<input type="checkbox"/> <input type="checkbox"/> 4 Energy Conservation	<input type="checkbox"/> <input type="checkbox"/> 24 Solar Systems Testing and Evaluation	
<input type="checkbox"/> <input type="checkbox"/> 5 Energy Conversion	<input type="checkbox"/> <input type="checkbox"/> 25 Domestic Hot Water	
<input checked="" type="checkbox"/> <input type="checkbox"/> 6 Energy Storage	<input type="checkbox"/> <input type="checkbox"/> 26 Swimming Pool Heating	
<input type="checkbox"/> <input type="checkbox"/> 7 Heat and Energy Transfer	<input type="checkbox"/> <input type="checkbox"/> 27 Elec'l Generation, Central	
<input type="checkbox"/> <input type="checkbox"/> 8 Intro to Solar Energy	<input type="checkbox"/> <input type="checkbox"/> 28 Elec'l Generation, Small Scale	
<input type="checkbox"/> <input type="checkbox"/> 9 Marketing/Market Analysis	<input type="checkbox"/> <input type="checkbox"/> 29 Process Heat, Agricultural	
<input type="checkbox"/> <input type="checkbox"/> 10 Materials Research	<input type="checkbox"/> <input type="checkbox"/> 30 Process Heat, Industrial	
<input type="checkbox"/> <input type="checkbox"/> 11 Passiv'e Solar Technology	<input type="checkbox"/> <input type="checkbox"/> 31 Space Heating	
<input type="checkbox"/> <input type="checkbox"/> 12 Photovoltaics	<input type="checkbox"/> <input type="checkbox"/> 32 Space Cooling	
<input type="checkbox"/> <input type="checkbox"/> 13 Plumbing Techniques	<input type="checkbox"/> <input type="checkbox"/> 33 Wind Power, Central Systems	
<input type="checkbox"/> <input type="checkbox"/> 14 Solar Energy Policy Development	<input type="checkbox"/> <input type="checkbox"/> 34 Wind Power, Small Systems	
<input type="checkbox"/> <input type="checkbox"/> 15 Sheet Metal Techniques	Other (specify) _____	
<input type="checkbox"/> <input type="checkbox"/> 16 Solar System Components	<input type="checkbox"/> <input type="checkbox"/> 35 _____	
<input type="checkbox"/> <input type="checkbox"/> 17 Solar/Economics	<input type="checkbox"/> <input type="checkbox"/> 36 _____	
<input type="checkbox"/> <input type="checkbox"/> 18 Solar Home Construction		
<input type="checkbox"/> <input type="checkbox"/> 19 Solar Law/Legislation		
<input type="checkbox"/> <input type="checkbox"/> 20 Solar Collector Evaluation/Design		

**Please complete back of form for this course. Thank you.**

## **II. Educational Data Base — Course Information (Continued)**

### Materials Used or Proposed for Use in this Course

18. Is a text used in this course? Yes  No

19. Name of text \_\_\_\_\_ 20. Author \_\_\_\_\_

The following are used in this course:

21. Slides Yes  No  22. Films Yes  No  23. Demonstrations Yes  No

24. List sources of above materials or describe demonstrations.

25. Course Prerequisites (May be copied from catalog, etc.)

26. Course Description (May be copied from catalog, etc.)

Thank you very much for your participation.

## SELECTED SOURCES OF INFORMATION

An abundance of reference materials and other sources of information exists in the field of solar energy. The sources of information cited here will only be highlights of some of the information which can be obtained.

### a. Solar Energy Research Institute

For information about SERI publications contact the SERI Public Information Office, 1536 Cole Boulevard, Golden, Colorado 80401, (303) 231-1000. Ask to be placed on the mailing list for the SERI Publications and Presentations Bulletin, a quarterly publication. The first issue, Volume I-1, was published in November, 1978.

### b. US Department of Energy

- 1) "Guide to Solar Energy Programs" (Latest Edition) DOE/ET-0036/1, US Department of Energy, Assistant Secretary of Energy Technology Division of Solar Technology Washington, DC 20545

Also available from:

US Government Printing Office  
Washington, DC 20402 Price: \$2.40  
S/N 061-000-00042-9

- 2) "Solar Energy Task Force Report on Technical Training" (Appropriate for Educational Institutions involved in or anticipating involvement in solar course, program, or curriculum development.) Draft report distributed at the National Energy Education, Business and Labor Conference in Washington, DC, January 15-17, 1979.

Available from:

Education Programs Division  
US Department of Energy  
Forrestal Building, 1000 Independence Ave., SW  
Washington, DC 20585 (202) 376-9211  
Also available from:

SERI, Public Information Office  
1536 Cole Boulevard

Golden CO 80401

In DO [redacted] also ask for other documents available from the Education Programs Division of Inter-governmental and Institutional Relations and the Technology Transfer Division of Conservation and Solar Applications.

3) Education materials also available from:

US Department of Energy

Technical Information Center

PO Box 62

Oak Ridge, TN 37830

c. National Solar Heating and Cooling Information Center.

Bibliographies and reference lists are available along with films and many other resources. Call toll free (800) 523-2929. In Pennsylvania call (800) 462-4983. Or write:

National Solar Heating and Cooling Information Center  
PO Box 1607  
Rockville, MD 20850

d. US Office of Education.

For Possible funding sources obtain:

"A Selected Guide to Federal Energy and Education Assistance"

Energy and Education Action Center

US Office of Education, Room 514

Reporters Building 300 7th Street, SW

Washington, DC 20202 (202) 472-7777

USER EVALUATION SHEET

NATIONAL SOLAR ENERGY EDUCATION DIRECTORY

Please take a few minutes to complete the following form. Your comments will be valuable to us.

1. I found the 1978-79 NSEED:

Extremely useful       Useful

Not very useful, but worth having       Not worth printing

Comments: \_\_\_\_\_

2. I found the information to be:

Sufficiently detailed       Not detailed sufficiently

Comments: \_\_\_\_\_

3. I would like to see the following cross references in future directories:

a. \_\_\_\_\_

b. \_\_\_\_\_

4. I found the printing quality to be:

Satisfactory       Unsatisfactory

5. I recommend the continuation of an annual publication of the Solar Energy Education Directory:

Yes       No

6. I recommend the following additions, deletions, changes to be made in future directories:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7. I would like to see the following special reports from the data base on solar energy education:

\_\_\_\_\_

\_\_\_\_\_

Please return form to:

Academic Programs Branch  
Attn: Kevin O'Connor  
Solar Energy Research Institute  
1536 Cole Boulevard  
Golden, Colorado 80401

(Optional) Respondent's Name and Address

Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_

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NORMAL, Alabama 35762  
(205) 859-7011

SOLAR RELATED COURSESAn Introduction to Practical Energy Systems

Instructor: Jenkins, Joseph  
(205) 859-7320  
Course Number: IDS 501  
Department: Technology/Engineering  
Technology  
Credits: 3  
Student Level: College Graduate  
Duration: 10 Weeks, 8.0 hrs per week  
Contact Hours: 80  
Classroom: 60  
Laboratory: 20  
Number of Times Taught: 2  
Average Enrollment: 30

Heat Transfer

Instructor: Jenkins, Joseph  
(205) 859-7320  
Course Number: MET 408  
Department: Technology/Engineering  
Technology  
Credits: 3  
Student Level: Junior or Senior  
Duration: 18 Weeks, 3.0 hrs per week  
Contact Hours: 54  
Classroom: 54  
Topics Covered Extensively: Heat and  
Energy Transfer  
Number of Times Taught: 4  
Average Enrollment: 10

Thermodynamics

Instructor: Jenkins, Joseph  
(205) 859-7320  
Course Number: MET 306  
Department: Technology/Engineering  
Technology  
Credits: 3  
Student Level: Junior or Senior  
Duration: 18 Weeks, 3.0 hrs per week  
Contact Hours: 54  
Classroom: 54  
Number of Times Taught: 15  
Average Enrollment: 15

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ALABAMA IN BIRMINGHAM, U

BIRMINGHAM, Alabama 35294  
(205) 934-4011

SOLAR RELATED COURSES

Ener. Crisis, Homeowners Alternatives  
Instructor: Garrison, Aubrey  
(205) 871-7336  
Department: Special Studies  
Student Level: All levels  
Duration: 6 Weeks, 2.0 hrs per week  
Contact Hours: 12

Topics Covered Extensively: Appropriate  
Technology; Energy Conservation; Intro.  
to Solar Energy; Materials Research;  
Passive Solar Technology; Solar Home  
Construction

Number of Times Taught: 2  
Average Enrollment: 15

Energy Crisis and the Environment

Instructor: Young, John  
(204) 934-3375  
Course Number: ENV 2  
Department: Physics  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Number of Times Taught: 10  
Average Enrollment: 100

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ALABAMA IN HUNTSVILLE, U

HUNTSVILLE, Alabama 35807  
(205) 895-6120

SOLAR RELATED COURSES

Solar Systems Analysis - Part I  
Instructor: Humphries/Nash  
(205) 453-3629  
Course Number: CE-T67  
Department: Continuing Education  
Student Level: College Graduate  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Topics Covered Extensively: Heat and  
Energy Transfer; Solar System  
Components; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Space Heating; Space Cooling  
Number of Times Taught: 2  
Average Enrollment: 15

Solar Systems Analysis - Part 4

Instructor: Humphries, William R.  
(205) 453-3629  
Course Number: CE-T74  
Department: Continuing Education  
Student Level: College Graduate  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Topics Covered Extensively: Solar System  
Components; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Space Heating; Space Cooling  
Number of Times Taught: 2  
Average Enrollment: 10

Survey of Solar Heating and Cooling.

Instructor: Humphries, William R.  
(205) 453-3629  
Course Number: CE-T49  
Department: Continuing Education  
Student Level: College Graduate  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Topics Covered Extensively: Heat and  
Energy Transfer; Intro. to Solar

Alabama

Solar Energy Research Institute

Energy; Solar Collector  
Evaluation/Design  
Number of Times Taught: 4  
Average Enrollment: 14

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AUBURN U AT MONTGOMERY  
MONTGOMERY, Alabama 36117  
(205) 279-9110

(8310)

SOLAR RELATED COURSES

*School Facility Planning*

Instructor: Harrison, Barker  
(205) 279-9110  
Course Number: 691  
Department: Education/Administrator  
Credits: 4  
Student Level: College Graduate  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 48  
Classroom: 36  
Laboratory: 8  
Number of Times Taught: 10  
Average Enrollment: 16

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AUBURN U MAIN CAMPUS  
AUBURN, Alabama 36830  
(205) 826-4000

(1009)

SOLAR RELATED COURSES

*Energy Conscious Design*

Instructor: Paxley, Harry  
(205) 821-4517  
Course Number: AP 405  
Department: Architecture  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Number of Times Taught: 5  
Average Enrollment: 15

*Solar Energy Utilization*

Instructor: Goodling, J. S.  
(205) 826-4579  
Course Number: 683  
Department: Mechanical Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Topics Covered Extensively: Intro. to  
Solar Energy; Solar Economics; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Space Heating  
Number of Times Taught: 3  
Average Enrollment: 10

*Special Problems and Terminal Project*

Instructor: Lechner, Norbert  
(205) 826-4518

Course Number: 6600490  
Department: Architecture & Fine  
Arts  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Number of Times Taught: 2  
Average Enrollment: 15

MONTVALLO, UNIVERSITY OF  
MONTVALLO, Alabama 35115  
(205) 665-2521

(1004)

SOLAR RELATED COURSES

*Energy and Civilization*

Instructor: Kwon, T.H.  
(205) 665-2521  
Course Number: 20  
Department: Physics  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 14 Weeks, 3.5 hrs per week  
Contact Hours: 50  
Classroom: 36  
Laboratory: 4  
Number of Times Taught: 2  
Average Enrollment: 22

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## 1978-79 National Solar Energy Education Directory

Alaska

### Colleges/Universities

ALASKA METH UNIVERSITY  
ANCHORAGE, Alaska 99504  
(907) 276-8181

(1061)

### SOLAR RELATED COURSES

#### Alaska's Energy Resources

Instructor: Rutledge, Eugene  
Course Number: PHYS 492  
Department: Arts and Sciences  
Credits: 3  
Student Level: Junior or Senior  
Duration: 14 Weeks, 2.5 hrs per week  
Contact Hours: 35  
Classroom: 35  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Economics; Solar Law/Legislation; Elec'l Generation, Central; Space Heating; Wind Power, Central Systems; Wind Power, Small Systems  
Number of Times Taught: 1  
Average Enrollment: 10

U OF ALASKA KENAI CC  
SOLDOTNA, Alaska 99669  
(907) 262-5801

(1066)

### SOLAR RELATED COURSES

#### Alternative Sources I

Instructor: Steffy, D.  
(907) 262-5801  
Course Number: ET 211  
Department: Applied Science  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 30  
Laboratory: 30  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conversion; Energy Storage; Heat and Energy Transfer; Plumbing Techniques; Solar Economics; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Process Heat, Agricultural; Space Heating; Wind Power, Central Systems; Wind Power, Small Systems

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U OF ALASKA NORTHWEST CC  
HOME, Alaska 99762  
(907) 443-2201

(13169)

### SOLAR RELATED COURSES

#### Environment Society

Instructor: McGuire, Nancy  
(907) 443-2201  
Course Number: BIOL103  
Department: Arts and Science  
Credits: 3  
Student Level: All levels  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42

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U OF ALASKA TAHANA VLY CC  
FAIRBANKS, Alaska 99701  
(907) 479-7035

(29093)

### SOLAR RELATED COURSES

#### Const. and Analysis Ener. Eff. Homes

Instructor: Raggasch, Robert  
(907) 479-7880  
Course Number: P.D. 193  
Department: Community Interest Programs  
Credits: 2  
Student Level: All levels  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Topics Covered Extensively: Alternate Energy Sources

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**Colleges/Universities**

**ARIZONA STATE UNIVERSITY**  
TEMPE, Arizona 85281  
(602) 965-9011

**PROGRAMS AND CURRICULA****Energy Conversion and Power Systems**

Degree: PhD, MS, BS, Mechanical Engineering  
Contact: Metzger, D. E.  
(602) 965-3291

Students/Taking or Completing Offering:  
Trade Specialty

**SOLAR RELATED COURSES****Direct Energy Conversion 487**

Course Number: MEE 487  
Department: Mechanical Engineering  
Program or Curriculum: Energy Conversion and Power Systems  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Energy Conversion  
Average Enrollment: 25

**Direct Energy Conversion 583**

Course Number: MEE 583  
Department: Mechanical Engineering  
Program or Curriculum: Energy Conversion and Power Systems  
Credits: 3  
Student Level: College Graduate  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Energy Conversion  
Number of Times Taught: 2  
Average Enrollment: 5

**Direct Energy Conversion 587**

Instructor: Backus, C.E.  
(602) 954-3857  
Course Number: MEE587  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Laboratory: 0  
Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer; Photovoltaics; Elec'l Generation, Central; Elec'l Generation, Small Scale  
Number of Times Taught: 11  
Average Enrollment: 22

**Heat Transfer (Convection)**

Course Number: MEE 586  
Department: Mechanical Engineering

Program or Curriculum: Energy Conversion and Power Systems  
Credits: 3  
Student Level: College Graduate  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Heat and Energy Transfer  
Number of Times Taught: 1  
Average Enrollment: 10

**P-5: Energy Technology**

Course Number: MEE 498  
Department: Mechanical Engineering  
Program or Curriculum: Energy Conversion and Power Systems  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Number of Times Taught: 1  
Average Enrollment: 15

**P-5i Solar Energy Fundamentals**

Course Number: MEE 498  
Department: Mechanical Engineering  
Program or Curriculum: Energy Conversion and Power Systems  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Number of Times Taught: 1  
Average Enrollment: 15

**S: Photovoltaics**

Course Number: MEE 591  
Department: Mechanical Engineering  
Program or Curriculum: Energy Conversion and Power Systems  
Credits: 3  
Student Level: College Graduate  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Photovoltaics  
Number of Times Taught: 1  
Average Enrollment: 5

**Solar Energy**

Instructor: Wood, Byard D.  
(602) 965-7298  
Course Number: MEE658  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector

**Evaluation/Design; Solar Systems Design.**

Number of Times Taught: 1  
Average Enrollment: 15

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**ARIZONA, UNIVERSITY OF  
TUCSON, Arizona 85721**  
(602) 684-2751

**PROGRAMS AND CURRICULA****Energy Systems Engineering**

Degree: MS, BS, Engineering  
Contact: Carlite, R.N.  
(602) 626-1672

Students Taking or Completing Offering:  
Researcher, Solar Engineer

**SOLAR RELATED COURSES****Advanced Solar Engineering**

Instructor: Fazzolare, Rocco  
(602) 626-2487  
Course Number: 301  
Department: Engineering  
Program or Curriculum: Energy Systems, Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Space Cooling  
Number of Times Taught: 3  
Average Enrollment: 7

**Solar Energy Engineering**

Instructor: Rogers, W.L.  
(602) 626-2159  
Course Number: AME 267  
Department: Engineering, Mines  
Program or Curriculum: Energy Systems Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Number of Times Taught: 3  
Average Enrollment: 70

**Solar, Wind, Biomass Ener. Util.**

Instructor: Larson, D.L./William, D.W.  
(602) 626-3463  
Course Number: 199  
Department: Soils, Water & Engineering  
Credits: 2  
Student Level: All levels  
Duration: 17 Weeks, 4.0 hrs per week  
Contact Hours: 68  
Classroom: 17

**Laboratory: 51**

Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Intro. to Solar Energy; Solar System Components

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**NORTHERN ARIZ UNIVERSITY**  
FLAGSTAFF, Arizona 86001  
(602) 523-9011

**PROGRAMS AND CURRICULA****Mechanical Engineering Technology**

Degree: BS, Engineering Technology  
Contact: Hepworth, H. Kent  
(602) 523-5251

Students Taking or Completing Offering:  
Solar Engineer

**SOLAR RELATED COURSES****Direct Energy Conversion**

Instructor: Hepworth, H. Kent  
(602) 523-5251  
Course Number: EGR 402  
Department: Engineering & Technology  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conversion; Materials Research; Photovoltaics  
Number of Times Taught: 10  
Average Enrollment: 40

**Solar Energy Technology**

Instructor: Kuzma, Dennis C.  
(602) 523-5251  
Course Number: EGR 451  
Department: Engineering and Technology  
Program or Curriculum: Mechanical Engineering Technology  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 3  
Average Enrollment: 20

**Solar Engineering Analysis and Design**

Instructor: Kuzma, Dennis C.  
(602) 523-5251  
Course Number: EGR 451

**Department:** Engineering and Technology  
**Program or Curriculum:** Mechanical Engineering Technology  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45  
**Topics Covered Extensively:** Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
**Number of Times Taught:** 4  
**Average Enrollment:** 33

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#### Community/Junior Colleges

**COCHISE COLLEGE**  
 DOUGLAS, Arizona 85607  
 (602) 364-7943

(1072)

#### SOLAR RELATED COURSES

##### *Solar Energy Systems*

**Instructor:** Elkins, Bob  
 (602) 458-7110  
**Course Number:** TI025  
**Department:** Technology  
**Credits:** 3  
**Student Level:** Freshman or Sophomore  
**Duration:** 16 Weeks, 5.0 hrs per week  
**Contact Hours:** 80  
**Classroom:** 32  
**Laboratory:** 48  
**Topics Covered Extensively:** Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design

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**GLENDALE CMY COLLEGE**  
 GLENDALE, Arizona 85302  
 (602) 934-2211

(1076)

#### SOLAR RELATED COURSES

**Bld.-It-Yourself-Sol. Water Heating**  
**Instructor:** Pittenger  
 (602) 966-5488  
**Course Number:** G 220-226  
**Department:** Continuing Education

**Student Level:** All levels  
**Duration:** 1 Weeks, 8.0 hrs per week  
**Contact Hours:** 8  
**Classroom:** 1  
**Laboratory:** 7  
**Topics Covered Extensively:** Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Energy Storage; Intro. to Solar Energy; Solar System Components; Solar Home Construction; Solar Systems Installation; Domestic Hot Water  
**Number of Times Taught:** 1

#### *Solar Energy: A Consumer Guide*

**Instructor:** Pittenger  
 (602) 966-5488  
**Course Number:** G 192  
**Department:** Continuing Education  
**Student Level:** All levels  
**Duration:** 13 Weeks, 2.0 hrs per week  
**Contact Hours:** 26  
**Classroom:** 20  
**Laboratory:** 6  
**Topics Covered Extensively:** Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Home Construction; Solar Systems Installation; Domestic Hot Water  
**Number of Times Taught:** 1

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#### MOHAVE COMMUNITY COLLEGE

(11864)

KINGMAN, Arizona 86401  
 (602) 757-4331

#### SOLAR RELATED COURSES

##### *Intro. Solar Energy*

**Instructor:** Byfield, Hal  
 (602) 757-4331  
**Course Number:** PHY091  
**Department:** Physics  
**Credits:** 3  
**Student Level:** Freshman or Sophomore  
**Duration:** 18 Weeks, 3.0 hrs per week  
**Contact Hours:** 54  
**Classroom:** 54  
**Topics Covered Extensively:** Alternate Energy Sources  
**Number of Times Taught:** 3  
**Average Enrollment:** 15

#### *Solar Energy and Survival*

**Credits:** 3  
**Student Level:** Freshman or Sophomore  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Home Construction;

Solar Collector Evaluation/Design;  
Solar Systems Design; Solar Systems  
Testing and Evaluation; Space Heating;  
Space Cooling; Wind Power, Central  
Systems; Wind Power, Small Systems

**Special Project: Tech. of Solar Systems**

Instructor: Byfield, Hal  
(602) 757-4331  
Course Number: PHY290  
Department: Physics  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 18 Weeks, 3.0 hrs per week  
Contact Hours: 54  
Classroom: 54  
Topics Covered Extensively: Alternate  
Energy Sources  
Number of Times Taught: 3  
Average Enrollment: 15

Installation; Domestic Hot Water  
Number of Times Taught: 2  
Average Enrollment: 25

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**YAVAPAI COLLEGE** (1079)  
PRESCOTT, Arizona 86301  
(602) 445-7300

**PROGRAMS AND CURRICULA**

**Solar Energy Technology**  
Contact: Minkler, L./ Beverly, G./  
Strom, L.  
(602) 445-7300

Students Taking or Completing Offering:  
Do-it-yourself Homeowner,  
Installer-Residential (Solar System)

**SOLAR RELATED COURSES**

**Here Comes the Sun**  
Instructor: Minkler, Lyle  
(602) 445-5264  
Course Number: PAS100  
Department: Science  
Program or Curriculum: Solar Energy Technology  
Credits: 1  
Duration: 5 Weeks, 3.0 hrs per week  
Contact Hours: 15  
Classroom: 15  
Topics Covered Extensively: Heat and  
Energy Transfer; Intro. to Solar  
Energy; Solar Economics; Solar  
Collector Evaluation/Design  
Number of Times Taught: 1  
Average Enrollment: 28

**Methane, Hind-Elec., Hood-Alt. Ener.**  
Instructor: Beverly, Gary  
(602) 445-7300  
Course Number: PHS109  
Department: Science  
Program or Curriculum: Solar Energy Technology  
Credits: 1  
Duration: 5 Weeks, 3.0 hrs per week  
Contact Hours: 15  
Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Bio Mass Conversion; Elec'l Generation,  
Small Scale  
Number of Times Taught: 4  
Average Enrollment: 14

**Solar Cookers**  
Instructor: Minkler, Lyle  
(602) 445-5264  
Course Number: PHS105  
Department: Science  
Program or Curriculum: Solar Energy Technology  
Credits: 1  
Duration: 5 Weeks, 3.0 hrs per week  
Contact Hours: 15  
Topics Covered Extensively: Solar  
Collector Evaluation/Design

**NORTHLAND PIONEER COLLEGE** (11862)  
HOBROOK, Arizona 86025  
(602) 524-6111

**SOLAR RELATED COURSES**

**Solar and Alternate Energy Sources**  
Instructor: Plucker, Frank  
(602) 289-5082  
Course Number: PHY180  
Department: Physics  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 17 Weeks, 3.0 hrs per week  
Contact Hours: 51  
Classroom: 40  
Laboratory: 11  
Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Intro. to Solar Energy  
Number of Times Taught: 6  
Average Enrollment: 14

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**RIO SALADO COMMUNITY COLLEGE** (90010)  
10451 Palmera Dr.  
Sun City, Arizona 85373  
(602) 974-9939

**SOLAR RELATED COURSES**

**Solar Energy**  
Instructor: Ploeser, Wm. J.  
(602) 977-7615  
Course Number: PH 101-9863  
Department: Physics  
Credits: 1  
Student Level: All levels  
Duration: 8 Weeks, 3.0 hrs per week  
Contact Hours: 16  
Topics Covered Extensively: Intro. to  
Solar Energy; Plumbing Techniques;  
Solar Collector Evaluation/Design;  
Solar Systems Design; Solar Systems

**Solar Greenhouse**

Instructor: Beverly, Gary  
(602) 445-7300  
Course Number: PHS107  
Department: Science  
Program or Curriculum: Solar Energy Technology  
Credits: 1  
Duration: 5 Weeks, 3.0 hrs per week  
Contact Hours: 15  
Topics Covered Extensively: Appropriate Technology; Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Solar System Components; Solar Systems Design; Space Heating  
Number of Times Taught: 5  
Average Enrollment: 16

**Solar Heating, Air and Water Systems**

Instructor: Minkler, Lyle  
(602) 445-5264  
Course Number: PHS101  
Department: Science  
Program or Curriculum: Solar Energy Technology  
Credits: 1  
Duration: 5 Weeks, 3.0 hrs per week  
Contact Hours: 15  
Topics Covered Extensively: Appropriate Technology; Energy Storage; Solar System Components; Solar Systems Design  
Number of Times Taught: 1  
Average Enrollment: 15

**Solar Heating, Passive and Hybrid Systems**

Instructor: Frerking, Mike  
Course Number: PHS102  
Department: Science  
Program or Curriculum: Solar Energy Technology  
Credits: 1  
Duration: 5 Weeks, 3.0 hrs per week  
Contact Hours: 15  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 9

**Solar Heating, Retrofit Systems**

Instructor: Minkler, Lyle  
(602) 445-7300  
Course Number: PHS104  
Department: Science  
Program or Curriculum: Solar Energy Technology  
Credits: 1  
Duration: 5 Weeks, 3.0 hrs per week  
Contact Hours: 15  
Topics Covered Extensively: Appropriate Technology; Energy Storage; Heat and Energy Transfer; Solar System Components; Solar Economics; Solar Law/Legislation; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating

**Solar Hot Water**

Instructor: Beverly, Gary  
(602) 445-7300  
Course Number: PHS103  
Department: Science  
Program or Curriculum: Solar Energy Technology  
Credits: 1  
Duration: 5 Weeks, 3.0 hrs per week  
Contact Hours: 15  
Topics Covered Extensively: Appropriate Technology; Energy Storage; Heat and Energy Transfer; Plumbing Techniques; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water  
Number of Times Taught: 1  
Average Enrollment: 4

**Solar Laboratory 121**

Instructor: Minkler, Lyle  
(602) 445-7300  
Course Number: PHS121  
Department: Science  
Program or Curriculum: Solar Energy Technology  
Credits: 1  
Duration: 6 Weeks, 4.5 hrs per week  
Contact Hours: 27  
Classroom: 6  
Laboratory: 21  
Topics Covered Extensively: Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling  
Number of Times Taught: 1  
Average Enrollment: 25

**Solar Laboratory 122**

Instructor: Minkler, Lyle  
(602) 445-7300  
Course Number: PHS 122  
Department: Science  
Program or Curriculum: Solar Energy Technology  
Credits: 1  
Duration: 6 Weeks, 4.5 hrs per week  
Contact Hours: 27  
Classroom: 6  
Laboratory: 21  
Topics Covered Extensively: Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling  
Number of Times Taught: 1  
Average Enrollment: 25

**Solar Laboratory 123**

Instructor: Minkler, Lyle  
(602) 445-7300  
Course Number: PHS 123  
Department: Science  
Program or Curriculum: Solar Energy Technology  
Credits: 1  
Duration: 6 Weeks, 4.5 hrs per week

Contact Hours: 27

Classroom: 6

Laboratory: 21

Topics Covered Extensively: Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling

Number of Times Taught: 1

Average Enrollment: 25

**Solar Laboratory 124**

Instructor: Minkler, Lyle  
(602) 445-7300

Course Number: PHS 124

Department: Science

Program or Curriculum: Solar Energy Technology

Credits: 1

Duration: 6 Weeks, 4.5 hrs per week

Contact Hours: 27

Classroom: 6

Laboratory: 21

Topics Covered Extensively: Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling

Number of Times Taught: 1

Average Enrollment: 25

**Solar Laboratory 125**

Instructor: Minkler, Lyle  
(602) 445-7300

Course Number: PHS 125

Department: Science

Program or Curriculum: Solar Energy Technology

Credits: 1

Duration: 6 Weeks, 4.5 hrs per week

Contact Hours: 27

Classroom: 6

Laboratory: 21

Topics Covered Extensively: Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling

Number of Times Taught: 1

Average Enrollment: 25

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**Colleges/Universities**

**ARKANSAS MAIN CAMPUS, U OF**  
**FAYETTEVILLE, Arkansas 72701**  
**(501) 575-2000**

(1108)

**SOLAR RELATED COURSES***Introduction to Solar Energy*

Instructor: Gilbrech, Donald A.  
 (501) 575-3054  
 Course Number: 4303  
 Department: Engineering Science  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48  
 Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Domestic Hot Water; Space Heating; Space Cooling  
 Number of Times Taught: 3  
 Average Enrollment: 25

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**CENTRAL ARKANSAS, U OF**  
**CONWAY, Arkansas 72032**  
**(501) 329-2931**

(1092)

**PROGRAMS AND CURRICULA***Solar Energy Workshop*

Degree: Certificate of Completion  
 Contact: Feck, Vincent J./ Jordan, Ken  
 (501) 329-2931  
 Students Taking or Completing Offering:  
 Contractor, Plumber, Sheet Metal Worker

**SOLAR RELATED COURSES***Workshop in Solar Energy*

Instructor: Jordan, Ken/ Pray, Dr.  
 (501) 329-2931  
 Department: Voc. Educ./Indus. Educ./Physics  
 Program or Curriculum: Solar Energy Workshop  
 Student Level: High School Graduate  
 Duration: 1 Weeks, 12.0 hrs per week  
 Contact Hours: 12  
 Classroom: 8  
 Laboratory: 4  
 Topics Covered Extensively: Intro. to Solar Energy; Plumbing Techniques; Solar System Components; Solar Home Construction; Solar Law/Legislation; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 93

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**Community/Junior Colleges**

**MISS CO COMM COLLEGE**  
**BLYTHEVILLE, Arkansas 72315**  
**(501) 762-1000**

(12860)

**PROGRAMS AND CURRICULA**

*Solar Energy Technology*  
 Degree: AD Applied Sci. in Solar Tech.  
 Contact: Hughes, G. Edward/ Benson, Chris  
 (501) 762-1020  
 Students Taking or Completing Offering:  
 Solar Technician

**SOLAR RELATED COURSES***Solar Technology Cooperative Education*

Instructor: Benson, C.M.  
 (501) 762-1020

Course Number: 58970  
 Department: Applied Science  
 Program or Curriculum: Solar Energy Technology  
 Credits: 6  
 Student Level: Freshman or Sophomore  
 Duration: 15 Weeks, 6.0 hrs per week  
 Contact Hours: 90  
 Topics Covered Extensively: Plumbing Techniques; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Elec'l Generation, Central; Elec'l Generation, Small Scale; Process Heat; Agricultural; Process Heat, Industrial; Space Heating; Space Cooling  
 Number of Times Taught: 1  
 Average Enrollment: 10

*Solar Technology I*

Instructor: Benson, C.M.  
 (501) 762-1020

Course Number: 58003  
 Department: Applied Science  
 Program or Curriculum: Solar Energy Technology  
 Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Appropriate Technology; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Collector Evaluation/Design; Domestic Hot Water; Space Heating; Space Cooling  
 Number of Times Taught: 1  
 Average Enrollment: 20

**Solar Technology I Lab.**

Instructor: Benson, C.M.  
 Course Number: (501) 762-1020  
 Department: 58001  
 Program or Curriculum: Applied Science  
 Credits: Solar Energy Technology  
 Student Level: 1  
 Duration: Freshman or Sophomore  
 Contact Hours: 15 Weeks, 2.0 hrs per week  
 Laboratory: 30  
 Topics Covered Extensively: Energy Storage; Materials Research; Plumbing Techniques; Solar System Components; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling  
 Number of Times Taught: 1  
 Average Enrollment: 10

**Solar Technology II**

Instructor: Benson, C.M.  
 Course Number: (501) 762-1020  
 Department: 58203  
 Program or Curriculum: Applied Science  
 Credits: Solar Energy Technology  
 Student Level: 1  
 Duration: Freshman or Sophomore  
 Contact Hours: 15 Weeks, 3.0 hrs per week  
 Classroom: 45  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Photovoltaics; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Elec'l Generation, Central; Elec'l Generation, Small Scale; Space Heating; Space Cooling  
 Number of Times Taught: 1  
 Average Enrollment: 20

**Solar Technology II Lab.**

Instructor: Benson, C.M.  
 Course Number: (501) 762-1020  
 Department: 58201  
 Program or Curriculum: Applied Science  
 Credits: Solar Energy Technology  
 Student Level: 1  
 Duration: Freshman or Sophomore  
 Contact Hours: 15 Weeks, 2.0 hrs per week  
 Laboratory: 30  
 Topics Covered Extensively: Materials Research; Photovoltaics; Plumbing Techniques; Solar System Components; Solar Systems Design; Solar Systems Testing and Evaluation; Elec'l Generation, Central; Elec'l Generation, Small Scale; Space Cooling  
 Number of Times Taught: 1  
 Average Enrollment: 10

**Solar Technology III**

Instructor: Benson, C.M.  
 Course Number: (501) 762-1020  
 Department: 58403  
 Program or Curriculum: Applied Science

Program or Curriculum: Solar Energy Technology  
 Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Energy Storage; Photovoltaics; Plumbing Techniques; Solar Energy Policy Development; Solar Economics; Solar Systems Design; Domestic Hot Water; Elec'l Generation; Central; Elec'l Generation, Small Scale; Process Heat, Agricultural; Process Heat, Industrial; Space Heating; Space Cooling  
 Number of Times Taught: 1  
 Average Enrollment: 20

**Solar Technology III Lab.**

Instructor: Benson, C.M.  
 Course Number: (501) 762-1020  
 Department: 58401  
 Program or Curriculum: Applied Science  
 Credits: Solar Energy Technology  
 Student Level: 1  
 Duration: Freshman or Sophomore  
 Contact Hours: 15 Weeks, 2.0 hrs per week  
 Laboratory: 30  
 Topics Covered Extensively: Energy Storage; Materials Research; Photovoltaics; Plumbing Techniques; Solar System Components; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Elec'l Generation, Central; Elec'l Generation, Small Scale; Process Heat, Agricultural; Process Heat, Industrial; Space Heating; Space Cooling  
 Number of Times Taught: 1  
 Average Enrollment: 10

**Solar Topics**

Instructor: Benson, C.M.  
 Course Number: (501) 762-1020  
 Department: 58700  
 Program or Curriculum: Applied Science  
 Credits: Solar Energy Technology  
 Student Level: 1  
 Duration: Freshman or Sophomore  
 Contact Hours: 15 Weeks, 2.0 hrs per week  
 Classroom: 30  
 Laboratory: 15  
 Topics Covered Extensively: Energy Storage; Photovoltaics; Plumbing Techniques; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Home Construction; Solar Law/Legislation; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation  
 Number of Times Taught: 1  
 Average Enrollment: 5

**Colleges/Universities**

**CAL INST OF TECHNOLOGY**  
PASADENA, California 91125  
(213) 795-6811

(1131)

**PROGRAMS AND CURRICULA**

\***Research in Heating and Photovoltaics**  
Contact: Cannon, R.H.

**SOLAR RELATED COURSES****\*Adv. Thermodynamics & Ener. Trans.**

Instructor: Acosta, A.J.  
Course Number: ME 118ABC  
Department: Eng'r & Appl. Sci.,  
Mech. Eng'r.

Program or Curriculum: \*Research in Heating and Photovoltaics  
Topics Covered Extensively: Heat and Energy Transfer

**\*Heat & Energy Transfer**

Instructor: Sabersky, R.H.  
Course Number: ME 19C  
Department: Eng'r & Appl. Sci.,  
Mech. Eng'r.

Program or Curriculum: \*Research in Heating and Photovoltaics

Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy

**\*Prin. of Ener. Conversion and Distrib.**

Instructor: Rannie, W.D.  
Course Number: ME102ABC  
Department: Eng'r. & Appl. Sci.,  
Mech. Eng'r.

Program or Curriculum: \*Research in Heating and Photovoltaics

**\*Solid-State Electronics Lab.**

Instructor: McCaldin, J.O.  
Course Number: APH 9  
Department: Eng'r & Appl. Sci.,  
Appl. Phys.

Program or Curriculum: \*Research in Heating and Photovoltaics

Topics Covered Extensively:  
Photovoltaics; Elec'l Generation,  
Central; Elec'l Generation, Small Scale

**\*Turbomachines**

Instructor: Rannie, W.D.  
Course Number: JP250ABC  
Department: Eng'r. & Appl. Sci.,  
Jet Prop.

Program or Curriculum: \*Research in Heating and Photovoltaics

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**CAL POLY ST UNI.- SAN LUIS OB** (1143)  
SAN LUIS OBISPO, California 93407

- (805) 546-0111

**PROGRAMS AND CURRICULA****Sol. Envirn. Systs./Envir. Engnr.**

Degree: BS, Environmental Engineering  
Contact: Holtz, Walter E.  
(805) 546-2539

- Students Taking or Completing Offering:  
Solar Engineer, Solar Technician, Other

**SOLAR RELATED COURSES****Intro to Environmental Design Sci**

Instructor: Pohl, Jens G.  
(805) 546-2841  
Course Number: EDES 221

Department: Architecture  
Credits: 3  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 20  
Laboratory: 10

Topics Covered Extensively: Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Solar Home Construction; Domestic Hot Water; Space Heating

Number of Times Taught: 3  
Average Enrollment: 120

**Solar Energy**

Instructor: Clark, W.E.  
(805) 546-1248  
Course Number: ENVE 221

Department: Environmental Engineering  
Program or Curriculum: Sol. Envirn. Systs./ Envir. Engnr.

Credits: 3  
Student Level: All levels  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30

Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Space Heating  
Number of Times Taught: 18  
Average Enrollment: 35

**Solar Energy Engineering**

Instructor: Niles, Philip W.  
(805) 546-2643  
Course Number: ENVE 322

Department: Environmental Engineering  
Program or Curriculum: Sol. Envirn. Systs./ Envir. Engnr.

Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 5.0 hrs per week  
Contact Hours: 50  
Classroom: 20  
Laboratory: 30

Topics Covered Extensively: Energy Storage; Heat and Energy Transfer  
34

Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 3  
 Average Enrollment: 25

**Solar Energy Systems Analysis**

Instructor: Niles, P.W.  
 (805) 546-2643

Course Number: ENVE 366  
 Department: Environmental Engineering

Program or Curriculum: Sol. Envirn. Systs./ Envir. Engnr.

Credits: 5

Student Level: Junior or Senior

Duration: 10 Weeks, 5.0 hrs per week

Contact Hours: 50

Classroom: 50

Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Solar System Components; Solar Economics; Domestic Hot Water; Process Heat, Agricultural; Process Heat, Industrial; Space Heating; Space Cooling

**Solar Energy Systems Design**

Instructor: Niles, P.W.  
 (805) 546-2643

Course Number: ENVE 367  
 Department: Environmental Engineering

Program or Curriculum: Sol. Envirn. Systs./ Envir. Engnr.

Credits: 3

Student Level: Junior or Senior

Duration: 10 Weeks, 7.0 hrs per week

Contact Hours: 70

Classroom: 10

Laboratory: 60

Topics Covered Extensively: Energy Storage; Passive Solar Technology; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Process Heat, Agricultural; Process Heat, Industrial; Space Heating; Space Cooling

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**CAL STATE C- DOMINGUEZ HLS** (1114)  
 DOMINGUEZ HILLS, California 90747  
 (213) 532-4300

**SOLAR RELATED COURSES****\*Energy and Man: Their Future Together**

Instructor: Gash, Ken/ Rogers,

Richard

Course Number: ED X403

Department: Grad. School of Education

Topics Covered Extensively: Energy

**Conversion; Solar Economics**

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**CAL STATE C- SAN BERNARDINO** (1142)  
 SAN BERNARDINO, California 92407  
 (714) 887-7201

**SOLAR RELATED COURSES****Energy and Its Utilization by Man**

Instructor: Mantel, K.  
 (714) 887-7344

Course Number: NS432  
 Department: Natural Sciences

Credits: 5  
 Student Level: Junior or Senior

Duration: 10 Weeks, 4.0 hrs per week

Contact Hours: 40

Classroom: 40

Topics Covered Extensively: Alternate Energy Sources; Energy Conversion

Number of Times Taught: 8

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**CAL STATE COLLEGE- SONOMA**

ROHNERT PARK, California 94928  
 (707) 664-2880

**PROGRAMS AND CURRICULA****\*Sol. Heat. Tech. Skills Training**

Contact: Mote, Gayla  
 (707) 664-2577

Students Taking or Completing Offering:  
 Solar Technician

**SOLAR RELATED COURSES****\*Solar Technician Train. Classes**

Program or Curriculum: \*Sol. Heat. Tech. Skills Training

Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Marketing/Market Analysis; Passive Solar Technology; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Economics; Solar Law/Legislation; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling

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CAL STATE POLY U- POMONA  
POMONA, California 91768  
(714) 598-4726

(1144)

## SOLAR RELATED COURSES

*Solar Energy Systems*

Instructor: Biddle, John R.  
(714) 598-0239  
Course Number: EGR590  
Department: Mechanical Engineering  
Credits: 4  
Student Level: College Graduate  
Duration: 12 Weeks, 4.0 hrs per week  
Contact Hours: 48  
Topics Covered Extensively: Appropriate Technology; Energy Storage; Photovoltaics; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation  
Number of Times Taught: 1  
Average Enrollment: 32

*Solar Thermal Engineering*

Instructor: Biddle, John R.  
(714) 598-0239  
Course Number: ME407  
Department: Mechanical Engineering  
Credits: 4  
Student Level: Junior or Senior  
Duration: 12 Weeks, 4.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water  
Number of Times Taught: 1  
Average Enrollment: 32

CAL STATE U- CHICO  
CHICO, California 95929  
(916) 895-5011

(1146)

## SOLAR RELATED COURSES

*Alternate Energy Systems*

Instructor: O'Bannon, James E.  
(916) 343-2975  
Course Number: 109  
Department: Industry and Technology  
Credits: 3  
Student Level: All levels  
Duration: 3 Weeks, 17.0 hrs per week  
Contact Hours: 51  
Classroom: 36  
Laboratory: 15  
Topics Covered Extensively: Alternate Energy Sources; Intro. to Solar Energy  
Number of Times Taught: 3  
Average Enrollment: 40

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CAL STATE U- FRESNO  
FRESNO, California 93740  
(209) 7487-9011

(1147)

## SOLAR RELATED COURSES

*Energy and the Environment*

Instructor: Russell, Kenneth  
(209) 487-2170  
Course Number: NSCI 140T  
Department: Natural Science  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Home Construction; Solar Law/Legislation; Solar Collector Evaluation/Design  
Number of Times Taught: 2  
Average Enrollment: 28

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CAL STATE U- FULLERTON  
FULLERTON, California 92634  
(714) 870-2011

(1137)

## SOLAR RELATED COURSES

*\*Solar Ener. & Eng'r. Appls.*

Instructor: Turner, Robert  
Course Number: EGRC 472  
Department: Mech. Eng'r.  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Topics Covered Extensively: Energy Conversion; Energy Storage; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Space Heating; Space Cooling

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CAL STATE U- HAYWARD  
HAYWARD, California 94542  
(415) 881-3000

(1138)

## SOLAR RELATED COURSES

*Energy and Environment*

Instructor: Good, R. H.  
(415) 881-3401  
Course Number: PHY-3650  
Department: Physics  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week

Contact Hours: 40  
 Classroom: 40  
 Number of Times Taught: 1  
 Average Enrollment: 20

**Environ. Ed. using Sch. and Comm. Res.**  
 Instructor: Railton, Esther  
 (415) 881-3027  
 Course Number: TED 6415  
 Department: Teacher Education  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 5.0 hrs per week  
 Contact Hours: 50  
 Classroom: 30  
 Laboratory: 20  
 Number of Times Taught: 6  
 Average Enrollment: 25

**Environmental Law**  
 Instructor: Smith, J. Malcolm  
 (415) 881-3221  
 Course Number: 3460  
 Department: Political Science  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 4.0 hrs per week  
 Contact Hours: 40  
 Classroom: 40  
 Topics Covered Extensively: Solar Law/Legislation  
 Number of Times Taught: 3  
 Average Enrollment: 23

**Geography Of Energy Resources**  
 Instructor: Fagenhart, Thomas H.  
 (415) 881-3159  
 Course Number: 4320  
 Department: Geography  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 4.0 hrs per week  
 Contact Hours: 40  
 Classroom: 40  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Energy Policy Development; Wind Power, Central Systems; Wind Power, Small Systems  
 Number of Times Taught: 7  
 Average Enrollment: 23

**Public Policy and the Environment**  
 Instructor: Lewis, Sherman  
 (415) 881-3221  
 Course Number: 4171  
 Department: Political Science  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 4.0 hrs per week  
 Contact Hours: 40  
 Classroom: 40  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Intro. to Solar Energy; Solar Energy Policy Development  
 Number of Times Taught: 5

Average Enrollment: 15

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CAL STATE U- LONG BEACH (1139)  
 LONG BEACH, California 90840  
 (213) 498-4121

#### PROGRAMS AND CURRICULA

Ener. Conv., Power Systs. Engineering  
 Degree: Other, Ener. Conv., Power Systs. Engineering  
 Contact: Unt, Hillard, Jordanides,  
 (213) 498-4407  
 Students Taking or Completing Offering:  
 Trade Specialty

#### SOLAR RELATED COURSES

**Energy Selection and Conversion**  
 Instructor: Dyer, J.L.  
 Course Number: ME411  
 Department: Mechanical Engineering  
 Program or Curriculum: Ener. Conv., Power Systs. Engineering  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Intro. to Solar Energy; Elec'l Generation, Central; Elec'l Generation, Small Scale; Wind Power, Small Systems

**Special Topics in Mech. Engin.**  
 Instructor: Sungu, Sabri  
 Course Number: ME405  
 Department: Mechanical Engineering  
 Program or Curriculum: Ener. Conv., Power Systs. Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 42  
 Topics Covered Extensively: Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Elec'l Generation, Central; Elec'l Generation, Small Scale; Space Heating; Space Cooling

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CAL STATE U- LOS ANGELES  
LOS ANGELES, California 90032  
(213) 224-0111

(1140)

## SOLAR RELATED COURSES

*Design of Solar Systems*

Instructor: Mann, George  
(213) 224-2479  
Department: Engineering, Mechanical  
Engineering  
Credits: 4  
Student Level: Junior or Senior  
Duration: 11 Weeks, 6.0 hrs per week  
Contact Hours: 66  
Classroom: 33  
Laboratory: 33  
Topics Covered Extensively: Appropriate  
Technology; Energy Conversion; Energy  
Storage; Heat and Energy Transfer;  
Solar System Components; Solar  
Economics; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Testing and  
Evaluation; Domestic Hot Water; Elec'l  
Generation, Central; Space Heating;  
Space Cooling

*Introduction to Solar Engineering*

Instructor: Mann, George  
(213) 224-2479  
Department: Engineering, Mechanical  
Engineering  
Credits: 4  
Student Level: Junior or Senior  
Duration: 11 Weeks, 6.0 hrs per week  
Contact Hours: 66  
Classroom: 33  
Laboratory: 33  
Topics Covered Extensively: Heat and  
Energy Transfer; Intro. to Solar  
Energy; Solar Collector  
Evaluation/Design

*Solar Energy Applications*

Instructor: Manvi, Ram/ Turner, R.  
(213) 224-2479  
Course Number: ENGR 498  
Department: Mechanical Engineering  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 30  
Laboratory: 10  
Topics Covered Extensively: Energy  
Conversion; Energy Storage; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Solar Economics; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Elec'l Generation,  
Central; Elec'l Generation, Small Scale  
Number of Times Taught: 12  
Average Enrollment: 10

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CAL STATE U- NORTHRIDGE  
NORTHRIDGE, California 91330  
(213) 885-1200

(1153)

## SOLAR RELATED COURSES

*Solar Energy for Homeowners*

Instructor: Dixon, Gregg W.  
(213) 885-2187  
Department: Mechanical and Chemical  
Engineering  
Student Level: All levels  
Duration: 6 Weeks, 3.0 hrs per week  
Contact Hours: 18  
Classroom: 18  
Number of Times Taught: 3  
Average Enrollment: 32

*Solar Energy Engineering*

Instructor: Dixon, Gregg W.  
(213) 885-2187  
Course Number: 4945  
Department: Mechanical and Chemical  
Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42  
Topics Covered Extensively: Intro. to  
Solar Energy; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 12

\*\*\*\*\*

CAL- BERKELEY, U OF  
BERKELEY, California 94720  
(415) 642-6000

(1312)

## PROGRAMS AND CURRICULA

*Solar Engineering*

Degree: BS, Sci-El. Eng. & Computer  
Sci.  
Contact: Birdsall, Charles K.  
(415) 642-4015  
Students Taking or Completing Offering:  
Solar Engineer, Electrician

## SOLAR RELATED COURSES

*Approaching a Solar Society*

Instructor: Berman, S./ Birdsall,  
C.K.  
(415) 642-4015  
Course Number: E298-4  
Department: Engineering  
Program or  
Curriculum: Solar Engineering  
Credits: 4  
Student Level: College Graduate  
Duration: 20 Weeks, 3.0 hrs per week  
Contact Hours: 60  
Topics Covered Extensively: Alternate  
Energy Sources; Energy Conversion;  
Intro. to Solar Energy; Solar Energy  
Policy Development

Number of Times Taught: 1  
Average Enrollment: 15

**Direct Energy Conversion**

Instructor: Hu, Chenming  
(415) 642-3393

Course Number: EEC 290 G  
Department: Elec. Eng. and Computer Sciences

Program or Curriculum: Solar Engineering  
Credits: 4  
Student Level: College Graduate  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 35  
Classroom: 30

Topics Covered Extensively: Energy Conversion; Intro. to Solar Energy; Photovoltaics; Elec'l Generation, Small Scale

Number of Times Taught: 1  
Average Enrollment: 8

**Elementary Solar Electric Systems**

Instructor: Smith, O.J.M.  
(415) 642-7591

Course Number: EECS165  
Department: Elec. Eng. & Computer Sci.

Program or Curriculum: Solar Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30

Topics Covered Extensively: Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Solar Systems Design; Solar Systems Installation; Elec'l Generation, Central; Wind Power, Small Systems

**Energy and Power**

Instructor: Lieberman, M.A.  
(415) 642-1030

Course Number: E160  
Department: Engineering

Program or Curriculum: Solar Engineering  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy

Number of Times Taught: 7

Average Enrollment: 100

**Energy Conversion Principles**

Instructor: Daily, John W.  
(415) 642-0238

Course Number: ME 145  
Department: Mechanical Engineering

Program or Curriculum: Solar Engineering  
Credits: 4

Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Photovoltaics

Number of Times Taught: 7  
Average Enrollment: 22

**Physics of Solar Radiation**

Instructor: Portis, Alan M.  
(415) 642-3697

Course Number: 180B  
Department: Physics

Program or Curriculum: Solar Engineering  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40

Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Passive Solar Technology; Photovoltaics; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating

**Physics of Solar Radiation**

Instructor: Portis, Alan M.  
(415) 642-3697

Course Number: 180A  
Department: Physics

Program or Curriculum: Solar Engineering  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40

Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Passive Solar Technology; Photovoltaics; Solar Collector Evaluation/Design; Solar Systems Design

**Sol. Ener. for Bldgs., Home, Pools**

Instructor: Pike, Nancie  
(415) 642-4151

Department: Continuing Education in Engineering

Student Level: College Graduate  
Duration: 1 Weeks, 16.0 hrs per week  
Contact Hours: 16

Topics Covered Extensively: Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar Collector Evaluation/Design; Solar Systems Design

Number of Times Taught: 9

Average Enrollment: 90

**Solar Cells-Basic to Advanced Systems**

Instructor: Barry, Helen  
(415) 642-4151

Department: Continuing Education in Engineering

Student Level: College Graduate

Duration: 1 Weeks, 40.0 hrs per week

Contact Hours: 8

Topics Covered Extensively:  
Photovoltaics

#### Solar Electric Systems

Instructor: Smith, O.J.M.  
(415) 642-7591

Course Number: EEC5166

Department: Elec. Eng. & Computer  
Sci.

Program or Curriculum: Solar Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 10 Weeks, 3.0 hrs per week

Contact Hours: 30

Classroom: 30

Topics Covered Extensively: Appropriate  
Technology; Energy Conversion; Energy  
Storage; Heat and Energy Transfer;  
Solar Economics; Solar Systems Design;  
Elec'l Generation; Central

#### Solar Electric Systems A

Instructor: Smith, O.J.M.  
(415) 642-7591

Course Number: EEC5215A

Department: Elec. Eng. & Computer  
Sci.

Program or Curriculum: Solar Engineering

Credits: 3

Student Level: College Graduate

Duration: 10 Weeks, 3.0 hrs per week

Contact Hours: 30

Classroom: 30

Topics Covered Extensively: Appropriate  
Technology; Energy Conversion; Energy  
Storage; Heat and Energy Transfer;  
Solar Economics; Solar Systems Design;  
Solar Systems Installation; Solar  
Systems Maintenance; Solar Systems  
Testing and Evaluation; Elec'l  
Generation; Central; Elec'l Generation,  
Small Scale

#### Solar Electric Systems B

Instructor: Smithy, O.J.M.  
(415) 642-7591

Course Number: EEC5C15B

Department: Elec. Eng. & Computer  
Sci.

Program or Curriculum: Solar Engineering

Credits: 3

Student Level: College Graduate

Duration: 10 Weeks, 3.0 hrs per week

Contact Hours: 30

Classroom: 30

Topics Covered Extensively: Appropriate  
Technology; Energy Conversion; Energy  
Storage; Heat and Energy Transfer;  
Solar Economics; Solar Systems Design;  
Solar Systems Installation; Solar  
Systems Maintenance; Solar Systems  
Testing and Evaluation; Elec'l  
Generation; Central; Elec'l Generation,  
Small Scale

#### Solar Energy

Instructor: Merriam, M.F.  
(415) 642-3664

Course Number: E 161

Department: Engineering

Program or Curriculum: Solar Engineering

Credits: 4

Student Level: Junior or Senior

Duration: 10 Weeks, 4.0 hrs per week

Contact Hours: 40

Classroom: 40

Topics Covered Extensively: Energy  
Conservation; Energy Storage; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Materials Research; Passive  
Solar Technology; Photovoltaics; Solar  
Economics; Solar Collector  
Evaluation/Design; Domestic Hot Water;  
Space Heating; Space Cooling; Wind  
Power; Central Systems

Number of Times Taught: 8

Average Enrollment: 75

#### Solar Energy Materials

Instructor: Merriam, M. F.  
(415) 642-3664

Course Number: MSME290G

Department: Mat. Sci. and Mineral  
Eng.

Program or Curriculum: Solar Engineering

Credits: 2

Student Level: College Graduate

Duration: 10 Weeks, 2.0 hrs per week

Contact Hours: 20

Classroom: 20

Topics Covered Extensively: Materials  
Research; Photovoltaics

Number of Times Taught: 5

Average Enrollment: 12

#### Solar Energy Seminar

Instructor: Merriam, M. F.  
(415) 642-3664

Course Number: E298-2

Department: Engineering

Program or Curriculum: Solar Engineering

Credits: 1

Student Level: Junior or Senior

Duration: 10 Weeks, 2.0 hrs per week

Contact Hours: 20

Classroom: 20

Topics Covered Extensively: Solar  
Economics

Number of Times Taught: 12

Average Enrollment: 40

#### Thermal Ener. Aspects in Plan. and Des.

Instructor: Parmar, John  
(415) 642-4811

Department: Environmental Design

Student Level: College Graduate

Duration: 2.0 Days, 6.0 hrs per day

Contact Hours: 12

Topics Covered Extensively: Energy  
Conservation; Heat and Energy Transfer;  
Intro. to Solar Energy; Passive Solar

Technology; Solar System Components; Domestic Hot Water; Space Heating; Space Cooling; Wind Power, Small Systems  
Number of Times Taught: 1  
Average Enrollment: 14

**Thermal Radiation ME253**

Instructor: Daily, John W.  
(415) 642-0288  
Course Number: ME253  
Department: Mechanical Engineering  
Program or Curriculum: Solar Engineering  
Credits: 4  
Student Level: College Graduate  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Topics Covered Extensively: Heat and Energy Transfer  
Number of Times Taught: 7  
Average Enrollment: 28

**Wind Energy**

Instructor: Pike, Nanette  
(415) 642-4151  
Department: Continuing Education in Engineering  
Student Level: College Graduate  
Duration: 1 Weeks, 8.0 hrs per week  
Contact Hours: 8  
Topics Covered Extensively: Wind Power, Central Systems; Wind Power, Small Systems  
Number of Times Taught: 2  
Average Enrollment: 35

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**CAL- DAVIS, U OF**

DAVIS, California 95616  
(916) 752-1011

**PROGRAMS AND CURRICULA**

**Graduate Solar Energy**  
Degree: MA, MS, Atmospheric Sciences  
Contact: Coulson, Kinsell  
(916) 752-1450  
Students Taking or Completing Offering:  
Educator, Researcher

**SOLAR RELATED COURSES**

**Radiation Instrumentation and Measurement**  
Instructor: Floccihini, R. G.  
(916) 752-7097  
Course Number: 108  
Department: Atmospheric Science  
Program or Curriculum: Graduate Solar Energy  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 5.0 hrs per week  
Contact Hours: 50

**Solar and Related Energy Sources**

Instructor: Floccihini, R. G.  
(916) 752-7097

Course Number: 203  
Department: Resource Science  
Program or Curriculum: Graduate Solar Energy  
Credits: 3  
Student Level: College Graduate  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Photovoltaics; Wind Power, Central Systems; Wind Power, Small Systems

**Solar Energy Applications**

Instructor: Floccihini, R. G.  
(916) 752-7097  
Course Number: 103  
Department: Resource Science  
Program or Curriculum: Graduate Solar Energy  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30

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**CAL- LOS ANGELES, U OF**  
LOS ANGELES, California 90024  
(213) 825-4321

(1315)

**PROGRAMS AND CURRICULA**

**Architecture/Urban Design**  
Degree: MA, OTHER, Architecture and Urban Planning  
Contact: Moore, Charles  
(213) 825-8959  
Students Taking or Completing Offering:  
Architect, Educator, Researcher

**Ener. Conserving Des. Elective**

Sequence  
Degree: MA, OTHER, Architecture and Urban Planning  
Contact: Moore, Charles  
(213) 825-8950  
Students Taking or Completing Offering:  
Architect, Researcher

**SOLAR RELATED COURSES**

**Building Climatology**  
Instructor: Givoni, Baruch/ Milne, Murray  
(213) 825-7370  
Course Number: 442  
Department: Architecture/Urban Design

Program or Curriculum: Ener. Conserving Des. Elective, Sequence  
Credits: 4  
Student Level: College Graduate  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40  
Topics Covered Extensively: Heat and Energy Transfer; Solar Systems Design

**Space Heating; Space Cooling**

Number of Times Taught: 3  
Average Enrollment: 40

**Heat and the Thermal Environment**

Instructor: Givoni, Baruch  
(213) 825-2769  
Course Number: 443  
Department: Architecture and Urban Planning  
Program or Curriculum: Ener. Conserving Des. Elective Sequence  
Credits: 4  
Student Level: College Graduate  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Solar Home Construction; Solar Systems Design; Space Heating; Space Cooling  
Number of Times Taught: 3  
Average Enrollment: 6

**Introduction to Energy Conserving Design I**

Instructor: Schoen, Richard  
(213) 825-1345  
Course Number: 446,403  
Department: Arch., Urb. Plan.-Arch.  
Urb. Design  
Program or Curriculum: Architecture/ Urban Design  
Credits: 1  
Student Level: College Graduate  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 5  
Laboratory: 5

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Marketing/Market Analysis; Passive Solar Technology; Plumbing Techniques; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Home Construction; Solar Law/Legislation; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling  
Number of Times Taught: 4  
Average Enrollment: 10

**Introduction to Energy Conserving Design II**

Instructor: Schoen, Richard  
(213) 825-1345  
Course Number: 446,403  
Department: Arch., Urb. Plan.-Arch.  
Urb. Design  
Program or Curriculum: Architecture/ Urban Design  
Credits: 1  
Student Level: College Graduate

Duration: 10 Weeks, 1.0 hrs per week

Contact Hours: 10

Classroom: 5

Laboratory: 5

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Marketing/Market Analysis; Passive Solar Technology; Plumbing Techniques; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Home Construction; Solar Law/Legislation; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling  
Number of Times Taught: 4  
Average Enrollment: 10

**Introduction to Energy Conserving Design III**

Instructor: Schoen, Richard  
(213) 825-1345  
Course Number: 446,403  
Department: Arch., Urb. Plan.-Arch.  
Urb. Design

Program or Curriculum: Architecture/ Urban Design  
Credits: 1  
Student Level: College Graduate  
Duration: 10 Weeks, 1.0 hrs per week  
Contact Hours: 40  
Classroom: 5  
Laboratory: 5

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Marketing/Market Analysis; Passive Solar Technology; Plumbing Techniques; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Home Construction; Solar Law/Legislation; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling  
Number of Times Taught: 4  
Average Enrollment: 10

**New Ener. Tech.-Res. Conv. Constraints**

Instructor: Buchberg, H.  
Course Number: 134A  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion  
Number of Times Taught: 5  
Average Enrollment: 20

**Proj. in Arch.: Computer Aided Design**

Instructor: Milne, Murray  
(213) 825-7370

1978-79 National Solar Energy Education Directory

California

Course Number: 403G  
 Department: Architecture and Urban Planning  
 Program or Curriculum: Ener. Conserving Des. Elective Sequence  
 Credits: 4  
 Student Level: College Graduate  
 Duration: 10 Weeks, 4.0 hrs per week  
 Contact Hours: 40  
 Classroom: 10  
 Laboratory: 30  
 Topics Covered Extensively: Solar Systems Design; Space Heating; Space Cooling  
 Number of Times Taught: 1  
 Average Enrollment: 3

*Solar Energy Use and Control*

Instructor: Buchberg, H.  
 (213) 825-5313  
 Course Number: 134B  
 Department: Chem, Nucl, Therm, Engr, Appl.Sci.  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 4.0 hrs per week  
 Contact Hours: 40  
 Classroom: 40  
 Topics Covered Extensively: Intro. to Solar Energy; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation  
 Number of Times Taught: 4  
 Average Enrollment: 17

*Topics in Thermal Design*

Instructor: Buchberg, H./ Mills, A.  
 (213) 825-5313  
 Course Number: 234A  
 Department: Chem, Nucl, Ther, Engr, Appl.Sci.  
 Credits: 4  
 Student Level: College Graduate  
 Duration: 10 Weeks, 4.0 hrs per week  
 Contact Hours: 40  
 Classroom: 40  
 Topics Covered Extensively: Heat and Energy Transfer  
 Number of Times Taught: 8  
 Average Enrollment: 8

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CAL. RIVERSIDE, U OF  
 RIVERSIDE, California 92521  
 (714) 787-1012

(1316)

**SOLAR RELATED COURSES**

*Calif. Solar Energy Tax Credit*

Instructor: Thiebaux, Brian  
 (714) 787-4101  
 Course Number: 888.31  
 Department: University Extension  
 Student Level: All levels  
 Duration: 1 Weeks, 5.0 hrs per week  
 Contact Hours: 5

Classroom: 5  
 Topics Covered Extensively: Solar Law/Legislation; Solar Collector Evaluation/Design

*Designing Standard Frame House for Solar Energy*

Instructor: Thiebaux, Brian  
 (714) 787-4101  
 Course Number: 888.3  
 Department: University Extension  
 Credits: 1  
 Student Level: All levels  
 Duration: 1 Weeks, 3.0 hrs per week  
 Contact Hours: 3  
 Classroom: 3  
 Topics Covered Extensively: Solar Home Construction; Solar Collector Evaluation/Design; Domestic Hot Water; Space Heating; Space Cooling

*Energy: Its Impact on the U.S. Economy*

Instructor: Thiebaux, Brian  
 (714) 787-4101  
 Course Number: X421  
 Department: University Extension  
 Credits: 3  
 Student Level: All levels  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Classroom: 30  
 Topics Covered Extensively: Marketing/Market Analysis; Solar Economics

*Refitting Your Home to Save Water, Energy, & Money*

Instructor: Richter, Jean  
 (714) 787-4361  
 Department: University Extension  
 Student Level: All levels  
 Duration: 1 Weeks, 9.0 hrs per week  
 Contact Hours: 9  
 Classroom: 9  
 Topics Covered Extensively: Solar Home Construction; Domestic Hot Water; Space Heating; Space Cooling

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CAL- SAN DIEGO, U OF  
 LA JOLLA, California 92093  
 (714) 452-2230

(1317)

**SOLAR RELATED COURSES**

*Ener. Cons. Through Arch. Design*

Instructor: Quigley, Rob  
 Course Number: 605.6  
 Department: Professional Programs  
 Student Level: College Graduate  
 Duration: 5 Weeks, 2.5 hrs per week  
 Contact Hours: 13  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Space Cooling

**California****Solar Energy Research Institute**

Number of Times Taught: 3

**Solar Energy For Your Home**

Instructor: Meyer, Greg  
 Course Number: B05.5  
 Department: Professional Programs  
 Student Level: College Graduate  
 Duration: 5 Weeks, 2.5 hrs per week  
 Contact Hours: 13  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

Number of Times Taught: 3

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**CAL- SANTA BARBARA, U OF** (1320)  
 SANTA BARBARA, California 93106  
 (805) 961-2311

**SOLAR RELATED COURSES****Solar Energy**

Instructor: Manalis, Mel  
 Course Number: ES105  
 Department: Environmental Studies  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 4.0 hrs per week  
 Contact Hours: 40  
 Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design  
 Number of Times Taught: 5  
 Average Enrollment: 75

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**CAL- SANTA CRUZ, U OF** (1321)  
 SANTA CRUZ, California 95064  
 (408) 429-0111

**SOLAR RELATED COURSES****\*Alternate Energy Sources**

Instructor: Scott, Peter  
 Course Number: ES428  
 Department: Environmental Studies  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy

Conservation; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design

**\*The Sun**

Instructor: Menger, Eva/ Hammond, George  
 Course Number: OAKES 38  
 Department: Oakes College  
 Topics Covered Extensively: Intro. to Solar Energy

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**COGSHELL COLLEGE**

SAN FRANCISCO, California 94108  
 (415) 433-1994

(1177)

**SOLAR RELATED COURSES****Solar Energy Appl. for Bldg.**

Instructor: Sartor, Dale  
 Course Number: CT 431  
 Department: Civil Engineering Technology  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 11 Weeks, 3.0 hrs per week  
 Contact Hours: 33  
 Classroom: 33  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Wind Power, Central Systems; Wind Power, Small Systems  
 Number of Times Taught: 3  
 Average Enrollment: 20

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**HARVEY MUDD COLLEGE**

CLAREMONT, California 91711  
 (714) 626-8511

(1171)

**SOLAR RELATED COURSES****Freshman Projects**

Instructor: Wolf, Robert  
 Course Number: FY 4  
 Department: Freshman Division  
 Credits: 1  
 Student Level: Freshman or Sophomore  
 Duration: 7 Weeks, 3.0 hrs per week  
 Contact Hours: 21  
 Classroom: 21  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology;

Solar Economics; Solar Collector  
 Evaluation/Design; Solar Systems  
 Design; Solar Systems Installation;  
 Solar Systems Maintenance; Solar  
 Systems Testing and Evaluation;  
 Domestic Hot Water; Swimming Pool  
 Heating; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 30

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**HUMBOLDT STATE U**

ARCATA, California 95521  
 (707) 826-3011

(1149)

**SOLAR RELATED COURSES**

*Solar Energy: Thermal Processes*  
 Instructor: Borgers, Tom R.  
 (707) 826-3255  
 Course Number: ENGR. 184  
 Department: Engr./Chem.  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Classroom: 30  
 Topics Covered Extensively: Heat and  
 Energy Transfer; Intro. to Solar Energy  
 Number of Times Taught: 3  
 Average Enrollment: 7

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**LA VERNE COLLEGE**

LA VERNE, California 91750  
 (714) 593-3511

(1216)

**SOLAR RELATED COURSES**

*Energy Colloquium*  
 Instructor: Green, Richard H.  
 (714) 593-3511  
 Credits: 4  
 Student Level: All levels  
 Duration: 14 Weeks, 3.0 hrs per week  
 Topics Covered Extensively: Alternate  
 Energy Sources; Appropriate Technology;  
 Biomass Conversion; Passive Solar  
 Technology; Photovoltaics; Solar Energy  
 Policy Development; Solar Economics;  
 Solar Law/Legislation; Wind Power,  
 Small Systems

*Energy Options*

Instructor: Arnold, Geo.  
 (714) 593-7792  
 Course Number: PHYSICS  
 Department: Physics  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 14 Weeks, 4.0 hrs per week  
 Contact Hours: 56  
 Topics Covered Extensively: Alternate  
 Energy Sources; Intro. to Solar Energy  
 Number of Times Taught: 1  
 Average Enrollment: 15

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**LOMA LINDA UNIVERSITY**

LOMA LINDA, California 92354  
 (714) 796-7311

(11218)

**SOLAR RELATED COURSES**

*Practical Solar Energy*  
 Instructor: Walls, Art  
 (714) 785-2218  
 Course Number: IND5 283  
 Department: Industrial Studies  
 Credits: 4  
 Duration: 12 Weeks, 5.0 hrs per week  
 Contact Hours: 60  
 Classroom: 30  
 Topics Covered Extensively: Heat and  
 Energy Transfer; Intro. to Solar  
 Energy; Solar System Components; Solar  
 Collector Evaluation/Design  
 Number of Times Taught: 2  
 Average Enrollment: 9

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**LOYOLA MARYMOUNT U**

LOS ANGELES, California 90045  
 (213) 642-2700

(11649)

**SOLAR RELATED COURSES**

*Thermal Aspects of Design*  
 Instructor: Callinan, J. P.  
 (213) 642-2827  
 Course Number: ME 571  
 Department: Mechanical Engineering  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 60  
 Topics Covered Extensively: Energy  
 Conversion; Heat and Energy Transfer;  
 Intro. to Solar Energy; Solar Collector  
 Evaluation/Design; Solar Systems  
 Design; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 10

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**NEW COLLEGE OF CALIFORNIA**

SAN FRANCISCO, California 94110  
 (415) 626-1694

(10831)

**PROGRAMS AND CURRICULA**

*Econ., Ener.-Formation of World  
 Conscious*  
 Degree: MA, BA, Humanities-Energy,  
 Economics, Design  
 Contact: Beru, Jelaleddin  
 (415) 626-1694  
 Students Taking or Completing Offering:  
 Educator, Researcher, Trade Specialty

**SOLAR RELATED COURSES**

**Econ., Ener.-Formation of World Conscious**

Instructor: Beorie, Bryon  
(415) 231-9466

Department: Humanities

Program or Curriculum: Econ., Ener.-Formation of World Conscious

Credits: 3

Student Level: Junior or Senior

Duration: 18 Weeks, 6.0 hrs per week

Contact Hours: 108

Classroom: 70

Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Intro. to Solar Energy; Solar Energy Policy Development; Solar Economics; Solar Systems Testing and Evaluation

Number of Times Taught: 2

Average Enrollment: 20

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**NORTHROP UNIVERSITY** (1248)  
INGLEWOOD, California 90306  
(213) 776-3410

**PROGRAMS AND CURRICULA**

**Energy Systems Engineering**

Degree: BS, Science, Energy Systems Engineering

Contact: Pelka, David G.  
(213) 641-3470

Students Taking or Completing Offering:  
Researcher, Solar Engineer

**SOLAR RELATED COURSES**

**Energy Conservation**

Instructor: Eytal, L. S.  
(213) 641-3470

Course Number: ES431

Department: Energy Systems Engineering

Program or Curriculum: Energy Systems Engineering

Credits: 4

Student Level: Junior or Senior

Duration: 10 Weeks, 4.0 hrs per week

Contact Hours: 40

Classroom: 40

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation

**Energy Control Systems**

Instructor: Pelka, D. G.  
(213) 641-3470

Course Number: ES436

Department: Energy Systems Engineering

Program or Curriculum: Energy Systems Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 10 Weeks, 3.0 hrs per week

Contact Hours: 30

Classroom: 30

Topics Covered Extensively: Solar Systems Testing and Evaluation

**Energy Design Systems I**

Instructor: Jacowitz, Lawrence  
(213) 641-3470

Course Number: ES471

Department: Energy Systems Engineering

Program or Curriculum: Energy Systems Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 10 Weeks, 5.0 hrs per week

Contact Hours: 50

Classroom: 20

Laboratory: 30

Topics Covered Extensively: Alternate Energy Sources; Solar Systems Design; Solar Systems Testing and Evaluation

**Energy Policy**

Instructor: Pelka, D. G.  
(213) 641-3470

Course Number: ES421

Department: Energy Systems Engineering

Program or Curriculum: Energy Systems Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 10 Weeks, 3.0 hrs per week

Contact Hours: 30

Classroom: 30

Topics Covered Extensively: Solar Energy Policy Development; Solar Law/Legislation

**Energy Systems Design II**

Instructor: Jacowitz, Lawrence  
(213) 641-3470

Course Number: ES472

Department: Energy Systems Engineering

Program or Curriculum: Energy Systems Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 10 Weeks, 5.0 hrs per week

Contact Hours: 50

Classroom: 20

Laboratory: 30

Topics Covered Extensively: Alternate Energy Sources; Solar Systems Design; Solar Systems Testing and Evaluation

**Energy Systems Design III**

Instructor: Jacowitz, Lawrence  
(213) 641-3470

Course Number: ES473

Department: Energy Systems Engineering

Program or Curriculum: Energy Systems Engineering

Credits: 3  
 Student Level: Junior or Senior  
 Duration: 10 Weeks; 5.0 hrs per week  
 Contact Hours: 50  
 Classroom: 20  
 Laboratory: 30  
 Topics Covered Extensively: Alternate Energy Sources; Solar Systems Design; Solar Systems Testing and Evaluation

**Environmental Systems**

Instructor: Pelka, D. G.  
 (213) 641-3470  
 Course Number: ES352  
 Department: Energy Systems Engineering  
 Program or Curriculum: Energy Systems Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Classroom: 30  
 Topics Covered Extensively: Appropriate Technology

**Law and Energy Applications**

Instructor: Pelka, D. G.  
 (213) 641-3470  
 Course Number: ES433  
 Department: Law School  
 Program or Curriculum: Energy Systems Engineering  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 4.0 hrs per week  
 Contact Hours: 40  
 Classroom: 40  
 Topics Covered Extensively: Alternate Energy Sources; Solar Law/Legislation

**Photovoltaic Technology**

Instructor: Pelka, D. G.  
 (213) 641-3470  
 Course Number: ES 311  
 Department: Energy Systems Engineering  
 Program or Curriculum: Energy Systems Engineering  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 6.0 hrs per week  
 Contact Hours: 60  
 Classroom: 30  
 Laboratory: 30  
 Topics Covered Extensively: Energy Conversion; Photovoltaics; Elec'l Generation, Small Scale  
 Number of Times Taught: 1  
 Average Enrollment: 10

**Solar Energy Systems I**

Instructor: Jacowitz, Lawrence  
 (213) 641-3470  
 Course Number: ES321  
 Department: Energy Systems Engineering

Program or Curriculum: Energy Systems Engineering  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 6.0 hrs per week  
 Contact Hours: 60  
 Classroom: 30  
 Laboratory: 30  
 Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
 Number of Times Taught: 3

**Solar Energy Systems II**

Instructor: Jacowitz, Lawrence  
 (213) 641-3470  
 Course Number: ES401  
 Department: Energy Systems Engineering  
 Program or Curriculum: Energy Systems Engineering  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 6.0 hrs per week  
 Contact Hours: 60  
 Classroom: 30  
 Laboratory: 30  
 Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer; Solar Systems Testing and Evaluation; Elec'l Generation, Central; Elec'l Generation, Small Scale  
 Number of Times Taught: 2  
 Average Enrollment: 8

**Wind Machine Design & Operation**

Instructor: Lord, Paul  
 (213) 641-3470  
 Course Number: ES441  
 Department: Energy Systems Engineering  
 Program or Curriculum: Energy Systems Engineering  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 4.0 hrs per week  
 Contact Hours: 40  
 Classroom: 40  
 Topics Covered Extensively: Wind Power, Central Systems; Wind Power, Small Systems  
 Number of Times Taught: 1

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**California****Solar Energy Research Institute**

**REDLANDS, UNIVERSITY OF**  
REDLANDS, California 92373  
(714) 793-2121

(1322)

**SOLAR RELATED COURSES**

\**Energy Alt. - Priorities, Policies*  
Instructor: Krantz, Reinhold J.  
(714) 793-2121  
Course Number: 25  
Department: Arts & Sci. - Eng'r  
Topics Covered Extensively: Alternate  
Energy Sources; Solar Economics

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**SAN DIEGO STATE U**  
SAN DIEGO, California 92182  
(714) 286-5000

(1151)

**SOLAR RELATED COURSES**

*Energy: Issues and Ideas*  
Instructor: Craig, George T.  
(714) 286-6067  
Course Number: E-360  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42  
Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conversion; Intro. to Solar  
Energy; Passive Solar Technology; Solar  
Economics  
Number of Times Taught: 1  
Average Enrollment: 20

*Solar Energy*  
Instructor: Thompson, Willis H.  
(714) 286-6082  
Course Number: NS 496  
Department: Natural Science  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Energy  
Conservation; Energy Storage; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Passive Solar Technology; Solar  
System Components; Solar Collector  
Evaluation/Design; Domestic Hot Water;  
Space Heating  
Number of Times Taught: 2  
Average Enrollment: 34

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**SAN FRANCISCO STATE U**  
SAN FRANCISCO, California 94132  
(415) 469-2141

(1154)

**SOLAR RELATED COURSES**

\**Design of Solar Energy Systems*  
Instructor: Warren, M.  
Course Number: ENGR 584  
Department: Science, Eng'r  
Credits: 3  
Topics Covered Extensively: Energy  
Conservation; Intro. to Solar Energy;  
Solar System Components; Solar  
Economics; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Domestic Hot Water; Space  
Heating

**\*Intro. to Solar Energy Systems**

Instructor: Warren, M.  
Course Number: ENGR 582  
Department: Science, Eng'r  
Credits: 3  
Topics Covered Extensively: Energy  
Conservation; Intro. to Solar Energy;  
Passive Solar Technology; Solar System  
Components; Solar Economics; Solar Home  
Construction; Solar Collector  
Evaluation/Design; Solar Systems Design

**\*Seminar in Science and Society**

Instructor: Shapiro, C.  
Course Number: PHYS 600  
Department: Science, Physics  
Credits: 3  
Student Level: Freshman or Sophomore

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**SAN FRANCISCO, U OF**  
SAN FRANCISCO, California 94117  
(415) 666-0600

(1325)

**PROGRAMS AND CURRICULA**

*Environmental Planning & Management*  
Degree: MS, Environm. Plan. and  
Management  
Contact: Petulla, Joseph M.  
(415) 666-6254

**SOLAR RELATED COURSES**

*Ecoservice*  
Instructor: Gruhn, Thomas  
(415) 666-6208  
Course Number: IDS 250  
Department: Continuing Education  
Program or  
Curriculum: Environmental Planning  
& Management  
Credits: 4  
Student Level: College Graduate  
Duration: 14 Weeks, 4.0 hrs per week  
Contact Hours: 56

**Energy For The Future**

Instructor: Albergotti, J. C.  
 Course Number: 121  
 Department: Science/Nat. Sci.  
 Credits: 3  
 Student Level: All levels  
 Duration: 4 Weeks, 12.0 hrs per week  
 Contact Hours: 48  
 Classroom: 32  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Collector Evaluation/Design; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling; Wind Power; Small Systems  
 Number of Times Taught: 1  
 Average Enrollment: 13

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**SAN JOSE STATE U**

(1155)  
 SAN JOSE, California 95192  
 (408) 277-2000

**PROGRAMS AND CURRICULA****Solar Design/Engineering**

Degree: BA, BS, Environ. Studies - Solar Emphasis  
 Contact: Aitken, Donald  
 (408) 277-3107  
 Students Taking or Completing Offering:  
 Solar Technician

**SOLAR RELATED COURSES****Solar Energy Theory**

Instructor: Aitken, Donald  
 Course Number: ES116  
 Department: Environmental Studies  
 Program or Curriculum: Solar Design/Engineering  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Energy Conservation; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Space Heating  
 Number of Times Taught: 4  
 Average Enrollment: 100

**Solar Energy Workshop**

Instructor: Aitken, Donald  
 Course Number: 186  
 Department: Environmental Studies  
 Program or Curriculum: Solar Design/Engineering  
 Credits: 3

Student Level: Junior or Senior  
 Duration: 15 Weeks, 9.0 hrs per week  
 Contact Hours: 135  
 Classroom: 45  
 Number of Times Taught: 3  
 Average Enrollment: 25

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**SANTA CLARA, UNIVERSITY OF**  
 SANTA CLARA, California 95053  
 (408) 984-4242

(1326)

**SOLAR RELATED COURSES****Solar Energy for Heating and Cooling I**

Instructor: Wedel, Roger  
 Course Number: ME 244  
 Department: Mech. Eng'r  
 Credits: 2  
 Student Level: College Graduate  
 Duration: 10 Weeks, 2.0 hrs per week  
 Contact Hours: 20  
 Topics Covered Extensively: Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating  
 Number of Times Taught: 5  
 Average Enrollment: 25

**Solar Energy for Heating and Cooling II**

Instructor: Wedel, Roger  
 Course Number: ME 245  
 Department: Mech. Eng'r  
 Credits: 2  
 Student Level: College Graduate  
 Duration: 10 Weeks, 2.0 hrs per week  
 Contact Hours: 20  
 Topics Covered Extensively: Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating  
 Number of Times Taught: 5  
 Average Enrollment: 25

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**SOUTHERN CALIFORNIA, U OF**  
 LOS ANGELES, California 90007  
 (213) 741-2311

(1328)

**PROGRAMS AND CURRICULA****Special Probs. in Solar Energy**

Degree: PhD, MS,  
 Students Taking or Completing Offering:  
 Solar Engineer, Researcher

**SOLAR RELATED COURSES**

*Sol. Ener. Conversion Sys. Des.*  
 Instructor: Lampert, Seymour  
 Course Number: (213) 741-2944  
 ME 499  
 Department: Mechanical Engineering  
 Program or Curriculum:  
 Special Probs. in Solar Energy  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Topics Covered Extensively: Energy Conservation; Energy Conversion; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 3  
 Average Enrollment: 18

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**STANFORD UNIVERSITY** (1305)  
 STANFORD, California 94305  
 (415) 497-2300

**SOLAR RELATED COURSES**

*Solar Energy*  
 Instructor: Ferziger  
 Course Number: (415) 497-3148  
 ME 255  
 Department: Mech. Engineering  
 Student Level: College Graduate  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Classroom: 30  
 Topics Covered Extensively: Intro. to Solar Energy; Passive Solar Technology; Solar Collector Evaluation/Design; Solar Systems Design  
 Number of Times Taught: 4  
 Average Enrollment: 30

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**Community/Junior Colleges**

**AMERICAN RIVER COLLEGE** (19552)  
 SACRAMENTO, California 95841  
 (916) 484-8011

**SOLAR RELATED COURSES**

*\*Alternative Energy Courses*

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**ANTELOPE VALLEY COLLEGE** (1113)  
 LANCASTER, California 93534  
 (805) 947-0160

**SOLAR RELATED COURSES**

*Air Cond./Refrig. A*  
 Instructor: Ford, Chuck  
 Course Number: (805) 943-3241  
 ACR 43A  
 Department: Technical Education  
 Credits: 5  
 Student Level: All levels  
 Duration: 18 Weeks, 10.0 hrs per week  
 Contact Hours: 180  
 Number of Times Taught: 12  
 Average Enrollment: 24

*Air Cond./Refrig. B*  
 Instructor: Ford, Chuck  
 Course Number: (805) 943-3241  
 ACP 43B  
 Department: Technical Education  
 Credits: 5  
 Student Level: All levels  
 Duration: 18 Weeks, 10.0 hrs per week  
 Contact Hours: 180  
 Number of Times Taught: 12  
 Average Enrollment: 24

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**BAKERSFIELD COLLEGE** (1118)  
 BAKERSFIELD, California 93305  
 (805) 395-4011

**SOLAR RELATED COURSES**

*Solar Heat. and Cool. of Res. Bldgs.*  
 Instructor: Tuttle, Robert E.  
 Course Number: (805) 395-4571  
 SOLAR I  
 Department: Industrial Education  
 Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 18 Weeks, 3.0 hrs per week  
 Contact Hours: 54  
 Classroom: 48  
 Laboratory: 6  
 Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Home Construction; Solar Law/Legislation; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
 Average Enrollment: 35

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California

**BUTTE COLLEGE**  
OROVILLE, California 95965,  
(916) 895-2511

(18073)

SOLAR RELATED COURSES

*Solar Energy Systems*

Instructor: Peters, Mary  
(916) 877-8308  
Course Number: TEC 280  
Department: Technology  
Credits: 3  
Student Level: All levels  
Duration: 12 Weeks, 3.0 hrs per week  
Contact Hours: 36  
Topics Covered Extensively: Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Swimming Pool Heating  
Number of Times Taught: 2  
Average Enrollment: 28

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**CABRILLO COLLEGE**  
APTOS, California 95003  
(408) 425-6000

(11124)

PROGRAMS AND CURRICULA

*Solar Technology*

Degree: AD, Science  
Contact: Burton, Dave  
(408) 425-6304  
Students Taking or Completing Offering:  
Solar Technician

SOLAR RELATED COURSES

*Alt. Energy Systems (Sol. Tech.)*

Course Number: CET60ABCD  
Department: Indust. - Elect. Tech.  
Program or Curriculum: Solar Technology  
Credits: 8  
Student Level: All levels  
Duration: 16 Weeks, 15.0 hrs per week  
Contact Hours: 240  
Classroom: 80  
Laboratory: 160  
Topics Covered Extensively: Alternate Energy Sources; Materials Research; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation

*Appl. of Solar Ener. in Agric.*

Course Number: CET 61  
Program or Curriculum: Solar Technology  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 5.0 hrs per week  
Contact Hours: 80  
Classroom: 32

Laboratory: 48  
Topics Covered Extensively: Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Process Heat, Agricultural

*Solar Architecture*

Course Number: CET 62  
Program or Curriculum: Solar Technology  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 5.0 hrs per week  
Contact Hours: 80  
Classroom: 32  
Laboratory: 48  
Topics Covered Extensively: Energy Conservation; Passive Solar Technology; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating

*Solar Electronics*

Course Number: CET 53  
Department: Indust. - Elect. Tech.  
Program or Curriculum: Solar Technology  
Credits: 2  
Student Level: All levels  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Topics Covered Extensively: Photovoltaics; Solar System Components; Domestic Hot Water; Elec'l Generation, Central; Elec'l Generation, Small Scale

*Solar Energy in Agriculture*

Course Number: CET 54  
Program or Curriculum: Solar Technology  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 4.0 hrs per week  
Contact Hours: 64  
Classroom: 32  
Laboratory: 32  
Topics Covered Extensively: Biomass Conversion; Intro. to Solar Energy; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Process Heat, Agricultural; Space Heating

*Solar Energy in Bldg. Design*

Course Number: CET 52  
Department: Indust. - Elect. Tech.  
Program or Curriculum: Solar Technology  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 4.0 hrs per week  
Contact Hours: 64  
Topics Covered Extensively: Energy

California

Solar Energy Research Institute

Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Plumbing Techniques; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design

*Solar Energy Tech. & Fabrication*

Course Number: CET 50 ABCD  
Department: Industrial - Electrical Technology  
Program or Curriculum: Solar Technology  
Credits: 8  
Student Level: All levels  
Duration: 16 Weeks, 12.0 hrs per week  
Contact Hours: 192  
Laboratory: 192  
Topics Covered Extensively: Solar System Components; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating

*Solar Retrofitting & Weatherizing*

Course Number: CET 51  
Department: Industrial - Electrical Technology  
Program or Curriculum: Solar Technology  
Credits:  
Student Level: All levels  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Topics Covered Extensively: Energy Conversion; Energy Storage; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation

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CERRO COSO CMTY COLLEGE  
RIDGECREST, California 93555  
(714) 375-5001

(10111)

PROGRAMS AND CURRICULA

\**Solar Engineering Technology*  
Degree: AD, Appl.Sci.- Sol Eng'r Tech  
Contact: Dodge, Dick  
(714) 375-5001  
Students Taking or Completing Offering:  
Solar Technician

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CHABOT COLLEGE-VALLEY CAMPUS  
3033 Collier Canyon Road  
Livermore, California 94550  
(415) 455-5300

(90160)

SOLAR RELATED COURSES

*Solar Design Fundamentals*

Instructor: Deleray, Arthur  
(415) 455-5300  
Course Number: 24  
Department: Physical Science  
Credits: 3  
Student Level: All levels  
Duration: 12 Weeks, 3.0 hrs per week  
Contact Hours: 36  
Classroom: 36  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Systems Design; Domestic Hot Water; Swimming Pool Heating; Space Heating

*Solar Heat for You*

Instructor: Deleray, Arthur  
(415) 455-5300  
Course Number: 24  
Department: Physical Science  
Credits: 2  
Student Level: All levels  
Duration: 12 Weeks, 2.0 hrs per week  
Topics Covered Extensively: Passive Solar Technology; Solar System Components; Swimming Pool Heating; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 40

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CHAFFEE COLLEGE  
ALTA LOMA, California 91701  
(714) 987-1737

(1163)

SOLAR RELATED COURSES

\**Solar Energy I*

Instructor: Rothwell, Robert  
Course Number: 507  
Department: Indus. Tech.  
Duration: 12 Weeks, 6.0 hrs per week  
Contact Hours: 72  
Topics Covered Extensively: Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

\**Solar Energy II*

Instructor: Rothwell, Robert  
Course Number: 508  
Department: Indus. Tech.  
Duration: 12 Weeks, 6.0 hrs per week  
Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Photovoltaics; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation

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**CITRUS COLLEGE**  
AZUSA, California 91702  
(213) 335-0521

(1166)

**SOLAR RELATED COURSES****Alternate Energy Sources**

Instructor: Bratt, George  
 Course Number: 102  
 Department: Physical Sciences/Engineering  
 Credits: 3  
 Student Level: All levels  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Law/Legislation; Solar Systems Design; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

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**COASTLINE CITY COLLEGE**  
FOUNTAIN VALLEY, California 92708  
(714) 963-0811

(29027)

**PROGRAMS AND CURRICULA****\*Solar Technician**

Students Taking or Completing Offering:  
 Solar Technician

**SOLAR RELATED COURSES****\*Solar Seminar****\*Ten Courses in Energy Management**

Program or Curriculum: Solar Technician

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**COLUMBIA JUNIOR COLLEGE**  
COLUMBIA, California 95310  
(209) 532-3141

(7707)

**SOLAR RELATED COURSES****\*Course on Alternate Energy**

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**COSUMNES RIVER COLLEGE**  
SACRAMENTO, California 95823  
(916) 421-1000

(7536)

**PROGRAMS AND CURRICULA**

**Envir. Des.-Intro. Sol. Ener. Systems**  
 Degree: AD, Environmental Design  
 Contact: Papousek, Connie  
 Students Taking or Completing Offering:  
 Installer-Residential (Solar System),  
 Installer-Commercial (Solar System),  
 Solar Technician

**SOLAR RELATED COURSES**

**ED 47, Alternate Energy Systems**  
 Instructor: House, Harold  
 Course Number: 3108-01  
 Department: Environmental Design  
 Program or Curriculum: Envir. Des. -Intro. Sol. Ener. Systems  
 Credits: 2  
 Duration: 8 Weeks, 3.0 hrs per week  
 Contact Hours: 24  
 Classroom: 24  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Intro. to Solar Energy; Photovoltaics  
 Number of Times Taught: 3  
 Average Enrollment: 15

**Intro. to Solar Energy Systems**

Instructor: House, Harold  
 Course Number: ED 31  
 Department: Environmental Design  
 Program or Curriculum: Envir. Des. -Intro. Sol. Ener. Systems  
 Credits: 2  
 Duration: 4 Weeks, 16.0 hrs per week  
 Contact Hours: 64  
 Classroom: 48  
 Laboratory: 16  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Space Cooling

**Residential Energy Conservation**

Instructor: House, Harold  
 Course Number: 3105-01  
 Department: Environmental Design  
 Program or Curriculum: Envir. Des. -Intro. Sol. Ener. Systems  
 Credits: 2  
 Duration: 3 Weeks, 8.0 hrs per week  
 Contact Hours: 24  
 Classroom: 24  
 Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Marketing/Market Analysis; Passive

**California****Solar Energy Research Institute**

Solar Technology; Solar Home Construction; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling  
 Number of Times Taught: 3  
 Average Enrollment: 15

**CUESTA COLLEGE** (1192)  
 SAN LUIS OBISPO, California 93406  
 (805) 544-2943

**SOLAR RELATED COURSES**

**App. of Solar Energy Systems**  
 Instructor: Lago-Marsino, Peter  
 (205) 543-2943  
 Course Number: CT60  
 Department: Construction Technology  
 Credits: 4  
 Student Level: Freshman or Sophomore  
 Duration: 18 Weeks, 6.0 hrs per week  
 Contact Hours: 108  
 Classroom: 54  
 Laboratory: 54  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Domestic Hot Water; Space Heating; Space Cooling  
 Number of Times Taught: 2  
 Average Enrollment: 18

**DE ANZA COLLEGE** (4480)  
 CUPERTINO, California 95014  
 (408) 996-4567

**SOLAR RELATED COURSES**

**Design of Sol. Ener. Sys.-Heat. and Cool. A**  
 Instructor: Wedel, R.  
 (408) 493-4411  
 Course Number: 379A  
 Department: Engineering  
 Credits: 2  
 Student Level: All levels  
 Duration: 12 Weeks, 2.0 hrs per week  
 Contact Hours: 24  
 Classroom: 24  
 Number of Times Taught: 4  
 Average Enrollment: 20

**Design of Sol. Ener. Sys.-Heat. and Cool. B**  
 Instructor: Wedell, R.  
 (408) 493-4411  
 Course Number: 379B  
 Department: Engineering  
 Credits: 2  
 Student Level: All levels  
 Duration: 12 Weeks, 2.0 hrs per week  
 Contact Hours: 24  
 Classroom: 24  
 Topics Covered Extensively: Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design

Number of Times Taught: 4  
 Average Enrollment: 20

**Utilization of Solar Energy**

Course Number: 369  
 Department: Engineering  
 Credits: 3  
 Student Level: All levels  
 Duration: 12 Weeks, 3.0 hrs per week  
 Contact Hours: 36  
 Classroom: 18  
 Laboratory: 18

**DESERT, COLLEGE OF THE PALM DESERT** (1182)  
 California 92260  
 (714) 346-8041

**SOLAR RELATED COURSES**

**Introduction to Solar Energy**  
 Instructor: Marzicola, John  
 (714) 346-8041  
 Course Number: ARCH 43  
 Department: Engineering and Technology  
 Credits: 3  
 Student Level: All levels  
 Duration: 18 Weeks, 3.0 hrs per week  
 Contact Hours: 54  
 Classroom: 54  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Intro. to Solar Energy; Solar Home Construction; Solar Law/Legislation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling  
 Number of Times Taught: 3  
 Average Enrollment: 42

**DIABLO VALLEY COLLEGE** (1191)  
 PLEASANT HILL, California 94523  
 (415) 685-1230

**SOLAR RELATED COURSES**

**Energy and Buildings**  
 Course Number: 150  
 Department: Arch./Engineering  
 Credits: 3  
 Duration: 16 Weeks, 6.0 hrs per week  
 Contact Hours: 96  
 Classroom: 48  
 Laboratory: 48

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California

EVERGREEN VALLEY COLLEGE  
SAN JOSE, California 95121  
(408) 274-7900

(12452)

Number of Times Taught: 4  
Average Enrollment: 30

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PROGRAMS AND CURRICULA

\*Solar Technician  
Students Taking or Completing Offering:  
Solar Technician

SOLAR RELATED COURSES

\*Solar and Energy Seminar

\*Solar House

\*Two Courses on Solar  
Program or  
Curriculum: \*Solar Technician

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FEATHER RIVER COLLEGE  
QUINCY, California 95971  
(916) 283-0202

(18597)

SOLAR RELATED COURSES

Solar Utilization and Energy-Wise Construction

Instructor: Martin, Bill  
(916) 283-1197  
Course Number: PHYS. SCI.75  
Department: Physical Science  
Credits: 2  
Student Level: All levels  
Duration: 18 Weeks; 2.0 hrs per week  
Contact Hours: 36  
Classroom: 36  
Topics Covered Extensively: Appropriate  
Technology; Energy Conservation; Energy  
Conversion; Energy Storage; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Passive Solar Technology; Solar  
Home Construction; Domestic Hot Water;  
Space Heating; Space Cooling  
Number of Times Taught: 1  
Average Enrollment: 15

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FOOTHILL COLLEGE  
LOS ALTOS HILLS, California 94022  
(415) 948-8590

(11997)

SOLAR RELATED COURSES

Solar Energy  
Instructors: Blanchard, Heinemann/  
Schiavo

Course Number: ENV-STUD  
Department: Engineering &  
Technology  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Topics Covered Extensively: Intro. to  
Solar Energy

FRESNO CITY COLLEGE  
FRESNO, California 93704  
(209) 442-4600

(1307)

SOLAR RELATED COURSES

Solar Energy  
Instructor: Mortensen, David  
(209) 442-8215,  
Course Number: S.S. 47  
Department: Earth/Physical Science  
Credits: 2  
Student Level: All levels  
Duration: 6 Weeks, 6.0 hrs per week  
Contact Hours: 36  
Classroom: 36

Topics Covered Extensively: Solar  
Economics; Solar Home Construction;  
Solar Collector Evaluation/Design;  
Solar Systems Design; Domestic Hot  
Water

Number of Times Taught: 2  
Average Enrollment: 40

Solar Systems

Instructor: Wash, Dennis C.  
(209) 442-4600  
Course Number: AC-55  
Department: Technical-Industrial  
Credits: 3  
Student Level: All levels  
Duration: 18 Weeks, 4.0 hrs per week  
Contact Hours: 72  
Classroom: 36  
Laboratory: 36

Topics Covered Extensively: Alternate  
Energy Sources; Energy Conservation;  
Energy Storage; Heat and Energy  
Transfer; Intro. to Solar Energy;  
Materials Research; Passive Solar  
Technology; Photovoltaics; Plumbing  
Techniques; Solar System Components;  
Solar Home Construction; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Solar Systems  
Installation; Solar Systems  
Maintenance; Solar Systems Testing and  
Evaluation; Domestic Hot Water;  
Swimming Pool Heating; Space Heating;  
Space Cooling

\* \* \* \* \*

FULLERTON COLLEGE  
FULLERTON, California 92634  
(714) 871-8000

(1201)

SOLAR RELATED COURSES

\*Solar Heating  
Topics Covered Extensively: Space  
Heating

California

Solar Energy Research Institute

DAVILAN COLLEGE  
GIRROY, California 95020  
(408) 847-1400

(1202)

SOLAR RELATED COURSES

*Soil. Ener. H/Water Sys. Install.*

Instructor: Hansen, John  
(408) 847-1400  
Course Number: 66A  
Department: Occupational Education  
Credits: 3  
Student Level: All levels  
Duration: 12 Weeks, 5.0 hrs per week  
Contact Hours: 60  
Classroom: 24  
Laboratory: 36  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Solar System Components; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Swimming Pool Heating  
Number of Times Taught: 2  
Average Enrollment: 25

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GLENDALE CMTY COLLEGE  
GLENDALE, California 91208  
(213) 240-1000

(1203)

SOLAR RELATED COURSES

*\*Energy Alternatives*

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LONG BEACH CITY COLLEGE  
LONG BEACH, California 90808  
(213) 420-4111

(1219)

PROGRAMS AND CURRICULA

*\*Air Cond. & Refrig.*

SOLAR RELATED COURSES

*\*Solar Segment*

Department: Air Cond. & Refrig.  
Program or Curriculum: \*Air Cond. & Refrig.

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LOS ANGELES PIERCE COLLEGE (1226)  
WOODLAND HILLS, California 91371  
(213) 347-0551

SOLAR RELATED COURSES

*\*Energy & Power*  
Instructor: Duxler, William M.  
Course Number: PHY SC 13  
Department: Physics/Engineering  
Duration: 18 Weeks  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy

*\*Man & His Environs: Phys. Processes*

Instructor: Meyer, W. Craig  
(213) 347-0551  
Course Number: EN ST 1  
Department: Life & Earth Science  
Topics Covered Extensively: Alternate Energy Sources; Solar Systems Design

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LOS ANGELES TRADE TECH COLLEGE (1227)  
LOS ANGELES, California 90015  
(213) 746-0800

SOLAR RELATED COURSES

*Energy Management in Buildings*

Instructor: Adams, N.  
(213) 746-0800  
Course Number: EEM 189  
Department: Electrical-Mechanical  
Credits: 3  
Student Level: High School Graduate  
Duration: 20 Weeks, 3.0 hrs per week  
Contact Hours: 60  
Topics Covered Extensively: Energy Conservation; Heat and Energy Transfer

*Solar Energy*

Instructor: Adams, N.  
(213) 746-0800  
Course Number: EEM 188  
Department: Electrical-Mechanical Dept.  
Credits: 3  
Student Level: High School Graduate  
Duration: 20 Weeks, 3.0 hrs per week  
Contact Hours: 60  
Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 30

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## 1978-79 National Solar Energy Education Directory

California

MARIN, COLLEGE OF  
KENTFIELD, California 94904  
(415) 457-8811

(1178)

### SOLAR RELATED COURSES

**Energy Efficient Design**  
Instructor: Sartor, Dale  
Department: Adult Education  
Student Level: All levels  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 28  
Classroom: 20  
Laboratory: 8  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Process Heat; Industrial; Space Heating; Wind Power; Small Systems  
Number of Times Taught: 9  
Average Enrollment: 50

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MERCED COLLEGE  
MERCED, California 95340  
(209) 723-4321

(1237)

### SOLAR RELATED COURSES

**Residential Application-Solar Energy**  
Instructor: Cox, James W.  
(209) 723-4321  
Course Number: IT-40  
Department: Industrial Technology  
Credits: 3  
Student Level: High School Graduate  
Duration: 18 Weeks, 3.0 hrs per week  
Contact Hours: 54  
Classroom: 254  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

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MODESTO JUNIOR COLLEGE  
MODESTO, California 95350  
(209) 526-2000

(1240)

### PROGRAMS AND CURRICULA

**External - Project Sunrise**  
Contact: Wilson, E. William  
(209) 526-2000

### SOLAR RELATED COURSES

**Solar Energy Applications**  
Instructor: Wilson, E. William  
(209) 526-2000  
Course Number: PS 368  
Department: Dept. Engineering, Physical Science & Mathematics  
Program or Curriculum: External - Project Sunrise  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 42  
Laboratory: 6  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Storage; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Domestic Hot Water; Space Heating; Space Cooling; Wind Power; Small Systems  
Number of Times Taught: 4  
Average Enrollment: 35

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MOORPARK COLLEGE  
MOORPARK, California 93021  
(805) 529-2321

(7115)

### SOLAR RELATED COURSES

**Solar Heating Construction Institute**  
Instructor: Ainge, Ken  
(805) 529-2321  
Course Number: ET 89B  
Department: Technology  
Credits: 2  
Student Level: All levels  
Duration: 9 Weeks, 3.0 hrs per week  
Contact Hours: 27  
Classroom: 27  
Topics Covered Extensively: Appropriate Technology; Domestic Hot Water  
Number of Times Taught: 1  
Average Enrollment: 15

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**California****Solar Energy Research Institute**

**MOUNT SAN ANTONIO COLLEGE**  
**WALNUT, California 91789**  
**(714) 598-2811**

(1245)

**MT SAN JACINTO COLLEGE**  
**SAN JACINTO, California 92383**  
**(714) 654-7321**

(1246)

**PROGRAMS AND CURRICULA**

**Air Cond., Heat., and Vent.**  
**Degree: AD, Air Cond., Heat. and**  
**Refrig.**

**Contact: Dillon, Clifford**  
**(714) 594-5611**

**Students Taking or Completing Offering:**  
**Electrician, Solar Technician,**  
**Installer-Residential (Solar System),**  
**Installer-Commercial (Solar System),**  
**Plumber**

**SOLAR RELATED COURSES****Solar and Alternate Energy Sources**

**Instructor: Bormann, Jay**  
**(714) 594-5611**

**Course Number: 70****Department: Electronics**

**Program or Curriculum: Air Cond., Heat., and Vent.**

**Credits: 3**

**Student Level: Freshman or Sophomore**  
**Duration: 18 Weeks, 3.0 hrs per week**

**Contact Hours: 54****Classroom: 54**

**Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Solar System Components; Solar Economics; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Space Heating**

**Solar Energy Systems Installation**

**Instructor: Bormann, Jay**  
**(714) 594-5611**

**Course Number: 71/71L****Department: Electronics**

**Program or Curriculum: Air Cond., Heat., and Vent.**

**Credits: 3**

**Student Level: Freshman or Sophomore**  
**Duration: 18 Weeks, 6.0 hrs per week**

**Contact Hours: 108****Classroom: 54****Laboratory: 54**

**Topics Covered Extensively: Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation**

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**SOLAR RELATED COURSES****Solar Collector Design**

**Instructor: Caldwell, B.**  
**(714) 654-7321**

**Course Number: ENGR 6****Department: Vocational Education****Credits: 3****Student Level: Freshman or Sophomore****Duration: 18 Weeks, 3.0 hrs per week**

**Contact Hours: 54**

**Classroom: 45**

**Laboratory: 9**

**Topics Covered Extensively: Solar System Components; Solar Collector**

**Evaluation/Design**

**Number of Times Taught: 1**

**Average Enrollment: 34**

**Solar Energy Applications**

**Instructor: Caldwell, Benton**  
**(714) 654-7321**

**Course Number: ENGR 4**

**Department: Vocational Education**

**Credits: 3**

**Student Level: College Graduate**

**Duration: 18 Weeks, 3.0 hrs per week**

**Contact Hours: 54**

**Classroom: 49**

**Laboratory: 5**

**Topics Covered Extensively: Intro. to Solar Energy**

**Number of Times Taught: 2**

**Average Enrollment: 33**

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**NAPA COLLEGE**

(1247)

**NAPA, California 94558**  
**(707) 255-2100**

**SOLAR RELATED COURSES**

**Solar Energy Workshop**

**Instructor: Dean, Anson R.**  
**(916) 758-4686**

**Department: Continuing Education**

**Student Level: All levels**

**Duration: 6 Weeks, 3.0 hrs per week**

**Contact Hours: 18**

**Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Solar System Components; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Swimming Pool Heating**

**Number of Times Taught: 2**

**Average Enrollment: 50**

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Full Text Provided by ERIC

1978-79 National Solar Energy Education Directory

California

**OHLONE COLLEGE**  
FREMONT, California 94537  
(415) 657-2100

(4481)

SOLAR RELATED COURSES

\*Two Courses on Solar

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**ORANGE COAST COLLEGE**  
COSTA MESA, California 92626  
(714) 556-5651

(1250)

SOLAR RELATED COURSES

*Solar*

Instructor: Abernathy, Bill J.  
(714) 556-5812  
Course Number: 115  
Department: Technology  
Credits: 3  
Student Level: Junior or Senior  
Duration: 18 Weeks, 3.0 hrs per week  
Contact Hours: 54  
Topics Covered Extensively: Energy Storage; Intro. to Solar Energy; Solar System Components; Solar Economics; Space Heating  
Number of Times Taught: 2  
Average Enrollment: 30

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**PASADENA CITY COLLEGE**  
PASADENA, California 91106  
(213) 578-7123

(1261)

SOLAR RELATED COURSES

\*Energy Sources, Resources & Uses

Instructor: Ball, D.A.  
Course Number: EN100  
Department: Eng'r & Tech.  
Duration: 18 Weeks, 3.0 hrs per week  
Contact Hours: 54  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Intro. to Solar Energy; Wind Power, Small Systems

\*Solar Energy for the Consumer

Instructor: Yanow, Gilbert  
(213) 578-7301  
Department: Eng'r. & Tech.  
Duration: 9 Weeks, 3.0 hrs per week  
Contact Hours: 27  
Topics Covered Extensively: Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Swimming Pool Heating; Elec'l Generation, Small Scale; Space Heating

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**REDWOODS, COLLEGE OF THE**  
EUREKA, California 95501  
(707) 443-8411

(1185)

SOLAR RELATED COURSES

*Solar Heating A*

Instructor: Mills, David  
(707) 443-8411  
Course Number: ENSC 20A  
Department: Env. Sci.  
Credits: 1  
Student Level: All levels  
Duration: 12 Weeks, 1.0 hrs per week  
Contact Hours: 12  
Classroom: 12  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Photovoltaics; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 50

*Solar Heating B*

Instructor: Mills, David  
(707) 443-8411  
Course Number: ENSC 20B  
Department: Env. Sci.  
Credits: 1  
Student Level: All levels  
Duration: 12 Weeks, 1.0 hrs per week  
Contact Hours: 12  
Classroom: 12  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 50

*Solar Heating C*

Instructor: Mills, David  
(707) 443-8411  
Course Number: ENSC 20C  
Department: Env. Sci.  
Credits: 1  
Student Level: All levels  
Duration: 12 Weeks, 1.0 hrs per week  
Contact Hours: 12  
Classroom: 12  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation;

California

Solar Energy Research Institute

Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Economics; Solar Home

Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating

Number of Times Taught: 1  
Average Enrollment: 50

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RIVERSIDE CITY COLLEGE (1270)  
RIVERSIDE, California 92506  
(714) 684-3240

SOLAR RELATED COURSES

*Solar Energy Applications*

Instructor: Budd, Frank W.  
(714) 684-3240  
Course Number: AC 52A  
Department: Air Conditioning  
Credits: 5  
Student Level: All levels  
Duration: 18 Weeks, 7.0 hrs per week  
Contact Hours: 126  
Classroom: 72  
Laboratory: 54  
Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

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SACRAMENTO CITY COLLEGE (1233)  
SACRAMENTO, California 95822  
(916) 449-7531

SOLAR RELATED COURSES

*Basic Solar Heating and Cooling Systems*  
Instructor: Stockwell, Richard/  
Goff, Don  
(916) 449-7278  
Course Number: MET 141  
Department: Occupational  
Technology/Mechanical,  
Electrical Technology  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 18 Weeks, 3.0 hrs per week  
Contact Hours: 54  
Classroom: 54  
Topics Covered Extensively: Energy Storage; Intro. to Solar Energy;

Materials Research; Photovoltaics;  
Plumbing Techniques; Solar System Components; Solar Economics; Solar Law/Legislation; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Maintenance; Domestic Hot Water; Process Heat, Industrial; Space Heating; Space Cooling

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SAN BERNARDINO VLY COLLEGE (1272)  
SAN BERNARDINO, California 92403  
(714) 885-0231

SOLAR RELATED COURSES

\*Two Solar Courses

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SAN DIEGO CC- CITY COLLEGE (8895)  
SAN DIEGO, California 92101  
(714) 238-1181

PROGRAMS AND CURRICULA

\*Solar Ener. Maint. and Tech.  
Degree: AD, Advanced Degree

SOLAR RELATED COURSES

\*Two Courses on Solar Energy Maint., Tech.  
Program or  
Curriculum: \*Solar Ener. Maint. and Tech.

Topics Covered Extensively: Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation

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SAN DIEGO CC- EVENING COLLEGE (7478)  
SAN DIEGO, California 92101  
(714) 238-1181

PROGRAMS AND CURRICULA

Air Cond., Heat., Refrig., and Sol.  
Tech.

Degree: AD, OTHERS Air Cond., Heat.,  
Refrig., & Sol. Tech.

Contact: Belker, Loren  
(714) 238-1181

Students Taking or Completing Offering:  
Solar Technician, Trade Specialty

SOLAR RELATED COURSES

Adv. Sol. Ser. Maint. and Tech.

Instructor: Garcia, Theodore  
(714) 238-1181

Course Number: 226

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**California**

**Department:** City Campus  
**Program or Curriculum:** Air Cond. Heat., Refrig. and Sol. Tech.  
**Credits:** 3

**Student Level:** All levels  
**Duration:** 18 Weeks, 3.0 hrs per week  
**Contact Hours:** 54  
**Topics Covered Extensively:** Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Swimming Pool Heating; Space Heating  
**Number of Times Taught:** 3  
**Average Enrollment:** 35

**Air Cond., Heat., Refrig., and Sol. Ener.**  
**Instructor:** Faris, Theodore

(714) 238-1181

**Course Number:** 201  
**Department:** City Campus

**Program or Curriculum:** Air Cond., Heat., Refrig., and Sol. Tech.

**Credits:** 4

**Student Level:** All levels  
**Duration:** 18 Weeks, 6.0 hrs per week

**Contact Hours:** 108

**Classroom:** 54

**Laboratory:** 54

**Topics Covered Extensively:** Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Swimming Pool Heating; Space Heating  
**Number of Times Taught:** 3  
**Average Enrollment:** 35

**Sol. Ser. Maint. and Tech.**

**Instructor:** Faris, Theodore  
(714) 238-1181

**Course Number:** 225  
**Department:** City Campus

**Program or Curriculum:** Air Cond., Heat., Refrig., and Sol. Tech.

**Credits:** 3

**Student Level:** All levels

**Duration:** 18 Weeks, 3.0 hrs per week

**Contact Hours:** 54

**Topics Covered Extensively:** Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems

**Installation: Solar Systems Maintenance; Domestic Hot Water; Swimming Pool Heating; Space Heating**  
**Number of Times Taught:** 3  
**Average Enrollment:** 35

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**SAN DIEGO CC- MESA COLLEGE**  
SAN DIEGO, California 92111  
(714) 279-2300

(1275)

**SOLAR RELATED COURSES**

**Utilization of Solar Energy**

**Instructor:** Reeder, M.M.

(714) 279-2300

**Course Number:** 215  
**Department:** Building Construction Technology

**Credits:**

**Student Level:** Freshman or Sophomore  
**Duration:** 18 Weeks, 6.0 hrs per week

**Contact Hours:** 108

**Classroom:** 54

**Laboratory:** 54

**Topics Covered Extensively:** Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating  
**Number of Times Taught:** 4  
**Average Enrollment:** 25

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**SAN JOAQUIN DELTA COLLEGE**  
STOCKTON, California 95207  
(209) 478-2011

(1280)

**SOLAR RELATED COURSES**

**\*Energy Conservation and Alternatives**

**Instructor:** Oliver, James E.

**Course Number:** NR750

**Department:** Physics

**Duration:** 10 Weeks, 3.0 hrs per week

**Contact Hours:** 30

**Topics Covered Extensively:** Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy

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California

Solar Energy Research Institute

SAN JOSE CITY COLLEGE  
SAN JOSE, California 95128  
(408) 298-2181

(1282)

(1186)

PROGRAMS AND CURRICULA

\*Solar Technician

Degree: AD, Science  
Contact: Herrick, Clyde N./Upton, S.  
Students Taking or Completing Offering:  
Solar Technician

\*Solar Technician

Degree: OTHER, Certificate of Achievement  
Contact: Herrick, Clyde/Upton, S.  
Students Taking or Completing Offering:  
Solar Technician

SOLAR RELATED COURSES

\*Solar Energy - Indust. Appl.

Instructor: Upton, S.  
Course Number: SOL114  
Department: Solar Technology  
Program or Curriculum: \*Solar Technician  
Credits: 3

\*Solar Energy - Res. Appl.

Instructor: Upton, S.  
Course Number: SOL113  
Department: Solar Technology  
Program or Curriculum: \*Solar Technician  
Credits: 3

\*Solar Photoelectric Conversion

Instructor: Upton, S.  
Course Number: SOL116  
Department: Solar Technology  
Program or Curriculum: \*Solar Technician  
Credits: 2

\*Solar Theory

Instructor: Upton, S.  
Course Number: PHYSCI21  
Program or Curriculum: \*Solar Technician  
Credits: 3

SANTA ANA COLLEGE

SANTA ANA, California 92706  
(714) 835-3000

(1284)

(1187)

SOLAR RELATED COURSES

\*Three Solar Courses

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SEQUOIAS, COLLEGE OF THE  
VISALIA, California 93277  
(209) 733-2050

SOLAR RELATED COURSES

Solar Applications

Instructor: Cottrell, Richard S.  
(209) 733-2050  
Course Number: PS 14  
Department: Architecture/Science  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling  
Number of Times Taught: 1  
Average Enrollment: 25

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SIERRA COLLEGE

(1290)

ROCKLIN, California 95677  
(916) 624-3333

SOLAR RELATED COURSES

Solar Energy Housing

Course Number: WT6  
Department: Wood Technology  
Credits: 3  
Student Level: All levels  
Duration: 18 Weeks, 3.0 hrs per week  
Contact Hours: 54  
Topics Covered Extensively: Energy Conservation  
Number of Times Taught: 4  
Average Enrollment: 50

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SISKIYOU, COLLEGE OF THE

(1187)

WEED, California 96094  
(916) 938-4463

SOLAR RELATED COURSES

\*Frontiers of Sci. - Energy for Consumers

Instructor: Crist, Friend, Dawson  
Course Number: SCI 10  
Department: Natural Science  
Topics Covered Extensively: Alternate Energy Sources; Solar Economics

\*\*\*\*\*

**SOUTHWESTERN COLLEGE** (1294)  
 CHULA VISTA, California 92010  
 (714) 420-1080

**SOLAR RELATED COURSES****\*One Solar Course**

**WEST VALLEY COLLEGE** (1338)  
 SARATOGA, California 95070  
 (408) 867-2200

**SOLAR RELATED COURSES**

*Introduction of Solar Energy*  
 Instructor: Feemster, John  
 (408) 925-3095  
 Department: Engineering  
 Credits: 3  
 Student Level: All levels  
 Duration: 18 Weeks, 3.0 hrs per week  
 Contact Hours: 54  
 Classroom: 54  
 Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling  
 Number of Times Taught: 8  
 Average Enrollment: 40

**Other Educational Institutions**

**ANTIOCH COLLEGE/WEST** (90520)  
 1161 Mission St.  
 San Francisco, California 94103

**PROGRAMS AND CURRICULA**

**\*Solar Energy & Design**  
 Degree: BA, MS, Envir. Studs. &  
 Approp. Tech.  
 Contact: Nelson, Lynn  
 (415) 864-2570

**SOLAR RELATED COURSES**

**\*Courses in Des., Const. of Sol. Systems**  
 Instructor: Olkowski, Helga  
 Department: Farallones Institute  
 Program or Curriculum: \*Solar Energy & Design  
 Topics Covered Extensively: Passive

Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Space Cooling

**CENTER FOR EMPLOYMENT TRAINING** (90350)  
 425 So. Market St.  
 San Jose, California 95113

**SOLAR RELATED COURSES**

**\*Building Maintenance**  
 Instructor: Rodriguez, Rudolph  
 Duration: 6 Weeks  
 Topics Covered Extensively: Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation

**OFFICE OF APPROPRIATE TECHNOLOGY** (90530)  
 PO Box 1677  
 Sacramento, California 95808

**PROGRAMS AND CURRICULA**

**\*Training Program for Installers**  
 (916) 445-1803  
 Students Taking or Completing Offering:  
 Installer-Residential (Solar System);  
 Installer-Commercial (Solar System)

**SOLAR TECHNICIAN TRAINING PROGRAM - OFFICE OF APPROPRIATE TECHNOLOGY** (90340)  
 1322 "O" Street  
 Sacramento, California 95814

**PROGRAMS AND CURRICULA**

**\*Solar Technician Training Program**  
 Contact: Trujillo, JoAnn  
 (916) 322-7190  
 Students Taking or Completing Offering:  
 Solar Technician

**SOLARCON** (90490)  
 PO Box 14875  
 San Francisco, California 94114

**SOLAR RELATED COURSES**

**\*Installers Workshop**  
 (415) 648-2159  
 Department: Karellem Educational Services  
 Topics Covered Extensively: Solar Systems Installation

**Colleges/Universities****ADAMS STATE COLLEGE**ALAMOSA, Colorado 81102  
(303) 589-7346

(1345)

**SOLAR RELATED COURSES****Special Projects: Solar Heating**Instructor: Spannagel, Larry  
(303) 589-3133

Course Number: 1A 303

Department: Industrial Arts

Credits: 2

Student Level: All levels

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 60

Classroom: 15

Laboratory: 45

Topics Covered Extensively: Appropriate Technology; Energy Storage; Passive Solar Technology; Solar Home Construction; Solar Systems Design; Domestic Hot Water; Space Heating

Number of Times Taught: 3

Average Enrollment: 13

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**COLO TECHNICAL COLLEGE**COLORADO SPRINGS, Colorado 80907  
(303) 598-0200

(10148)

**PROGRAMS AND CURRICULA****Solar Engineering Technology**Degree: BS, AD, Applied Science  
Contact: Christensen, Edward  
(303) 598-0200Students Taking or Completing Offering:  
Solar Engineer, Solar Technician**SOLAR RELATED COURSES****Associate Seminar**Instructor: Christensen, Edward  
(303) 598-0200Course Number: SOL 250  
Department: Solar Engineering Technology

Program or Curriculum: Solar Engineering Technology

Credits: 1

Student Level: Freshman or Sophomore

Duration: 11 Weeks, 1.0 hrs per week

Contact Hours: 11

Topics Covered Extensively: Alternate Energy Sources

**Directed Practice**Instructor: Christensen, Edward  
(303) 598-0200Course Number: SOL 299  
Department: Solar Engineering Technology

Program or Curriculum: Solar Engineering Technology

Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 11 Weeks, 6.0 hrs per week  
Classroom: 66  
Number of Times Taught: 14  
Average Enrollment: 6

**Introduction to Energy**Instructor: Sabo, Julius J.  
(303) 598-0200Course Number: SOL 100  
Department: Solar Engineering Technology

Program or Curriculum: Solar Engineering Technology  
Credits: 3  
Student Level: All levels  
Duration: 11 Weeks, 3.0 hrs per week  
Contact Hours: 33  
Classroom: 33  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology  
Number of Times Taught: 10  
Average Enrollment: 15

**Solar Design I**Instructor: Christensen, Edward  
(303) 598-0200Course Number: SOL 220  
Department: Solar Engineering Technology

Program or Curriculum: Solar Engineering Technology  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 11 Weeks, 6.0 hrs per week  
Contact Hours: 66  
Classroom: 22  
Laboratory: 44  
Topics Covered Extensively: Heat and Energy Transfer; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating  
Number of Times Taught: 9  
Average Enrollment: 8

**Solar Design II**Instructor: Christensen, Edward  
(303) 598-0200Course Number: SOL 221  
Department: Solar Engineering Technology

Program or Curriculum: Solar Engineering Technology  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 11 Weeks, 6.0 hrs per week  
Contact Hours: 66  
Classroom: 22  
Laboratory: 44  
Topics Covered Extensively: Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 9

**Colorado****Solar Energy Research Institute\***

Average Enrollment: 8

**Solar Science**Instructor: Decker, Tom  
(303) 598-0200

Course Number: SOL 200

Department: Solar Engineering  
TechnologyProgram or  
Curriculum: Solar Engineering  
Technology

Credits: 3

Student Level: Freshman or Sophomore

Duration: 11 Weeks, 3.0 hrs per week

Contact Hours: 33

Classroom: 33

Topics Covered Extensively: Intro. to  
Solar Energy

Number of Times Taught: 12

Average Enrollment: 10

**Solar Science II**Instructor: Christensen, Edward  
(303) 598-0200

Course Number: SOL 404

Department: Solar Engineering  
TechnologyProgram or  
Curriculum: Solar Engineering  
Technology

Credits: 3

Student Level: Junior or Senior

Duration: 11 Weeks, 3.0 hrs per week

Contact Hours: 33

Classroom: 33

Topics Covered Extensively: Heat and  
Energy Transfer; Solar Collector  
Evaluation/Design; Solar Systems  
Testing and Evaluation

Number of Times Taught: 2

Average Enrollment: 5

COLO-COLO SPRINGS, U OF  
COLORADO SPRINGS, Colorado 80907  
(303) 598-3737**PROGRAMS AND CURRICULA****Distributed Studies in Energy Science**

Degree: BA, Distributed Studies

Contact: Blade, Richard A.  
(303) 598-3737Students Taking or Completing Offering:  
Researcher, Solar Engineer, Other,  
Solar Technician**Solar Energy and Energy Sciences**

Degree: BS, Resource Systems

Contact: Engineering

Contact: Wiener, R.  
Students Taking or Completing Offering:  
Solar Engineer**SOLAR RELATED COURSES****Introduction to Energy Sciences 150**Instructors: Grogger, Scott P./  
Blade, R.

(303) 598-3737

Course Number: 150

Department: Physics and Energy  
SciencesProgram or  
Curriculum: Distributed Studies in  
Energy Science

Credits: 3

Student Level: All levels

Duration: 2 Weeks, 40.0 hrs per week

Contact Hours: 80

Classroom: 64

Laboratory: 16

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Conversion;  
Heat and Energy Transfer; Intro. to  
Solar Energy; Space Heating

Number of Times Taught: 2

Average Enrollment: 30

**Introduction to Energy Sciences 151**Instructors: Scott, M./Grogger, P./  
Blade, R.  
(303) 598-3737

Course Number: 151

Department: Physics and Energy  
SciencesProgram or  
Curriculum: Distributed Studies in  
Energy Science

Credits: 3

Student Level: All levels

Duration: 2 Weeks, 40.0 hrs per week

Contact Hours: 80

Classroom: 64

Laboratory: 16

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Conversion;  
Heat and Energy Transfer; Intro. to  
Solar Energy; Space Heating

Number of Times Taught: 2

Average Enrollment: 30

**Methods of Energy Sciences 350**Instructors: Grogger, P./Blade, R.  
(303) 598-3737

Course Number: 350

Department: Physics and Energy  
SciencesProgram or  
Curriculum: Distributed Studies in  
Energy Science

Credits: 3

Student Level: Junior or Senior

Duration: 16 Weeks, 6.0 hrs per week

Contact Hours: 96

Classroom: 96

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Conversion;  
Energy Storage; Heat and Energy  
Transfer

1978-79 National Solar Energy Education Directory

Colorado

Number of Times Taught: 1  
Average Enrollment: 15

**Methods of Energy Sciences 351**

Instructor: Grogger, P./ Blade, R.  
(303) 598-3737

Course Number: 351  
Department: Physics, and Energy Sciences  
Program or Curriculum: Distributed Studies in Energy Science  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 6.0 hrs per week  
Contact Hours: 96  
Classroom: 96  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer  
Number of Times Taught: 1  
Average Enrollment: 15

**Solar Energy I**

Instructor: Scott, M.  
Course Number: 195  
Department: Physics and Energy Science

Program or Curriculum: Solar Energy and Energy Sciences  
Credits: 3

**Solar Energy I, 160**  
Instructor: Scott, Michael  
(303) 598-3737

Course Number: 160  
Department: Physics and Energy Science

Program or Curriculum: Distributed Studies in Energy Science  
Credits: 3

Student Level: All levels  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 40  
Laboratory: 20

Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating

Number of Times Taught: 7

Average Enrollment: 30

**Solar Energy II**

Instructor: Scott, M.  
Course Number: 207  
Department: Physics & Energy Sci.  
Program or Curriculum: Solar Energy and Energy Sciences

Credit: 3  
**Solar Energy II, 360**  
Instructor: Jones, Robert  
(303) 598-3737  
Course Number: 360  
Department: Physics and Energy Sciences  
Program or Curriculum: Distributed Studies in Energy Science  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Materials Research; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling  
Number of Times Taught: 2  
Average Enrollment: 24

\* \* \* \* \*  
COLORADO AT BOULDER, U OF  
BOULDER, Colorado 80309  
(303) 492-0111

(1370)

PROGRAMS AND CURRICULA

Joint Inst. for Lab. Astrophysics  
Contact: Hummer, David  
(303) 492-6787

Students Taking or Completing Offering:  
Educator, Researcher, Solar Engineer

Lab for Atmospheric and Space Phys  
Contact: Barth, Charles A.  
(303) 492-7677

Students Taking or Completing Offering:  
Educator, Researcher, Solar Engineer

Solar/Appropriate Technology

Degree: BA, MA, Environmental Design  
Architecture  
Contact: Holloway, Dennis R.  
(303) 492-7497

Students Taking or Completing Offering:  
Architect, Researcher, Contractor,  
Installer-Residential (Solar System),  
Installer-Commercial (Solar System)

SOLAR RELATED COURSES

Appropriate Technology 333

Instructor: Holloway, Dennis R.  
(303) 492-7497  
Course Number: ENVD 333  
Department: Environmental Design  
Program or Curriculum: Solar/ Appropriate Technology

**Colorado****Solar Energy Research Institute**

Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 6.0 hrs per week  
 Contact Hours: 90  
 Classroom: 3  
 Laboratory: 8

**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Storage; Heat and Energy Transfer; Materials Research; Passive Solar Technology; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling  
 Number of Times Taught: 3  
 Average Enrollment: 50

**Appropriate Technology 334**

Instructor: Holloway, Dennis R.  
 (303) 492-7497  
 Course Number: ENVD 334  
 Department: Environmental Design  
 Program or Curriculum: Solar/ Appropriate Technology

Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 6.0 hrs per week  
 Contact Hours: 90  
 Classroom: 24  
 Laboratory: 66

**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Storage; Heat and Energy Transfer; Materials Research; Passive Solar Technology; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling  
 Number of Times Taught: 3  
 Average Enrollment: 50

**Community Design**

Instructor: Holloway, Dennis R.  
 (303) 492-7497  
 Course Number: 300  
 Department: Environmental Design  
 Program or Curriculum: 7

Credits: 6  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 8.0 hrs per week  
 Contact Hours: 120  
 Classroom: 24  
 Laboratory: 96

**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Passive Solar Technology; Solar Energy Policy Development; Solar Economics; Solar Home Construction  
**Solar Law/Legislation**

Number of Times Taught: 2  
 Average Enrollment: 40

**Computer-Aided Thermal Design**

Instructor: Johnson, Herbert  
 (303) 492-6648  
 Course Number: 458  
 Department: Mechanical Engineering  
 Program or Curriculum: Lab for Atmospheric and Space Phys., Joint Inst. for Lab. Astrophysics

Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48

**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Energy Conversion; Energy Storage; Solar System Components; Solar Systems Design

**Energy in a Technical Society**

Instructor: Bartlett, David  
 (303) 492-6960  
 Course Number: 207  
 Department: Arts and Sci., Phys./Astrophysics

Program or Curriculum: Joint Inst. for Lab. Astrophysics, Lab for Atmospheric and Space Phys.

Credits: 3  
 Student Level: All levels  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48

**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating

Number of Times Taught: 7  
 Average Enrollment: 50

**Energy Conversion**

Instructor: Johnson, Herbert  
 (303) 492-6648  
 Course Number: 455  
 Department: Engineering, Mechanical Engineering

Program or Curriculum: Lab for Atmospheric and Space Phys., Joint Inst. for Lab. Astrophysics

Credits: 3

**Student Level:** Junior or Senior  
**Duration:** 16 Weeks, 3.0 hrs per week  
**Contact Hours:** 48  
**Classroom:** 48  
**Topics Covered Extensively:** Energy Conversion; Heat and Energy Transfer; Elec'l Generation, Central

Number of Times Taught: 10  
 Average Enrollment: 25

**Energy Utilization**

**Instructor:** Krenz, Jerrold  
 (303) 492-7925  
**Course Number:** 496  
**Department:** Engineering/Electrical Engineering  
**Program or Curriculum:** Joint Inst. for Lab. Astrophysics, Lab for Atmospheric and Space Phys.

**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 16 Weeks, 3.0 hrs per week  
**Contact Hours:** 48  
**Classroom:** 48  
**Topics Covered Extensively:** Alternate Energy Sources; Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy  
 Number of Times Taught: 6  
 Average Enrollment: 25

**Solar Energy Utilization**

**Instructor:** Kreith, Frank West, Ron  
 (303) 492-7471  
**Course Number:** 405/505  
**Department:** Engineering/Chemical Engineering  
**Program or Curriculum:** Lab for Atmospheric and Space Phys., Joint Inst. for Lab. Astrophysics  
**Credits:** 3  
**Student Level:** College Graduate  
**Duration:** 16 Weeks, 3.0 hrs per week  
**Contact Hours:** 48  
**Classroom:** 48  
**Topics Covered Extensively:** Solar Collector Evaluation/Design; Solar Systems Design  
 Average Enrollment: 45

**Solar Technology**

**Instructor:** Holloway, Dennis R.  
 (303) 492-7497  
**Course Number:** ENVO 332  
**Department:** Environmental Design  
**Program or Curriculum:** Solar/ Appropriate Technology  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 12  
**Laboratory:** 33  
**Topics Covered Extensively:** Alternate

Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Passive Solar Technology; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 130

**Sun and Solar Energy**

**Instructor:** Malville, J. McKim  
 (303) 492-8913  
**Course Number:** 321  
**Department:** Arts and Sci, Astrogeophysics

**Program or Curriculum:** Lab for Atmospheric and Space Phys., Joint Inst. for Lab. Astrophysics  
**Credits:** 3  
**Student Level:** All levels  
**Duration:** 16 Weeks, 3.0 hrs per week  
**Contact Hours:** 48  
**Classroom:** 38  
**Laboratory:** 10

**Topics Covered Extensively:** Intro. to Solar Energy; Photovoltaics; Solar Collector Evaluation/Design  
 Number of Times Taught: 1  
 Average Enrollment: 120

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**COLORADO SCHOOL OF MINES**  
 GOLDEN, Colorado 80401  
 (303) 279-0300

(1348)

**SOLAR RELATED COURSES**

**Principles of Solar Energy Systems**  
**Instructor:** Mathews, Frank S.  
 (303) 279-0300  
**Course Number:** PH419  
**Department:** Physics  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 16 Weeks, 3.0 hrs per week  
**Contact Hours:** 48  
**Classroom:** 48  
**Topics Covered Extensively:** Energy Conversion; Heat and Energy Transfer; Photovoltaics; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Elec'l Generation, Central

Number of Times Taught: 3  
 Average Enrollment: 20

**Renewable Energy Sources**

**Instructor:** Miller, Sam  
 (303) 279-0300  
**Course Number:** BE479  
**Department:** Basic Engineering  
**Credits:** 3  
**Student Level:** Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conversion; Heat and Energy Transfer; Solar Systems Testing and Evaluation

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COLORADO STATE UNIVERSITY (1350)  
 FORT COLLINS, Colorado 80523  
 (303) 491-5321

#### PROGRAMS AND CURRICULA

*Solar Energy Applications*  
 Degree: PhD, MS, Engineering  
 Students Taking or Completing Offering:  
 Educator, Researcher, Solar Engineer

#### SOLAR RELATED COURSES

*Design of Solar Energy Systems*  
 Course Number: CE/M'E 675  
 Department: Engineering  
 Program or Curriculum: Solar Energy Applications  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Elec'l Generation, Central; Space Heating; Space Cooling  
 Number of Times Taught: 3  
 Average Enrollment: 30

*Principles of Solar Energy Applications*  
 Course Number: CE/M'E 676  
 Department: Engineering  
 Program or Curriculum: Solar Energy Applications  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Intro. to Solar Energy; Photovoltaics; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Elec'l Generation, Central; Space Heating; Space Cooling  
 Number of Times Taught: 3  
 Average Enrollment: 30

DENVER, UNIVERSITY OF (1371)  
 DENVER, Colorado 80210  
 (303) 753-1964

#### PROGRAMS AND CURRICULA

*Solar Energy*  
 Contact: Stonely, Paul J.  
 (303) 753-2194

Students Taking or Completing Offering:  
 Do-it-yourself Homeowner

#### SOLAR RELATED COURSES

*Solar Energy: Some Like It Hot*  
 Instructor: Vragel, Kurt  
 (303) 837-3385  
 Course Number: 00-99.11  
 Department: Continuing Education  
 Program or Curriculum: Solar Energy  
 Student Level: All levels  
 Duration: 9 Weeks, 2.0 hrs per week  
 Contact Hours: 18  
 Number of Times Taught: 7  
 Average Enrollment: 22

FORT LEWIS COLLEGE (1353)  
 DUPANGO, Colorado 81301  
 (303) 247-7661

#### SOLAR RELATED COURSES

*Elements of Solar Energy*  
 Instructor: Capp, Clifford  
 (303) 247-7249  
 Course Number: G5200  
 Department: General Studies  
 Credits: 3  
 Student Level: All levels  
 Duration: 5 Weeks, 8.0 hrs per week  
 Contact Hours: 40  
 Classroom: 20  
 Laboratory: 10  
 Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 3  
 Average Enrollment: 20

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1978-79 National Solar Energy Education Directory

Colorado

MESA COLLEGE  
GRAND JUNCTION, Colorado 81501  
(303) 248-1020

(1358)

PROGRAMS AND CURRICULA

*Solar Power*

Contact: Ramsey, Woodrow  
(303) 248-1565

Students Taking or Completing Offering:  
Do-it-yourself Homeowner

SOLAR RELATED COURSES

*Advanced Solar*

Instructor: Ramsey, Woodrow  
(303) 248-1565

Department: Continuing  
Education/Outreach

Program or Curriculum: Solar Power

Student Level: All levels

Duration: 10 Weeks, 3.0 hrs per week

Contact Hours: 30

Topics Covered Extensively: Energy  
Conversion; Energy Storage; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Passive Solar Technology; Solar  
System Components; Solar Home  
Construction; Solar Systems  
Installation; Solar Systems Maintenance

Number of Times Taught: 3

Average Enrollment: 25

*Beginning Solar Power*

Instructor: Ramsey, Woodrow  
(303) 248-1565

Department: Continuing  
Education/Outreach

Program or Curriculum: Solar Power

Student Level: All levels

Duration: 10 Weeks, 3.0 hrs per week

Contact Hours: 30

Topics Covered Extensively: Energy  
Conversion; Energy Storage; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Passive Solar Technology; Solar  
System Components; Solar Home  
Construction; Solar Systems  
Installation; Solar Systems Maintenance

Number of Times Taught: 3

Average Enrollment: 25

*Solar Practicum*

Instructor: Ramsey, Woodrow  
(303) 248-1565

Department: Continuing  
Education/Outreach

Program or Curriculum: Solar Power

Student Level: All levels

Duration: 10 Weeks, 3.0 hrs per week

Contact Hours: 30

Topics Covered Extensively: Energy  
Conversion; Energy Storage; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Passive Solar Technology; Solar  
System Components; Solar Home

Construction; Solar Systems  
Installation; Solar Systems Maintenance  
Number of Times Taught: 3  
Average Enrollment: 25

METROPOLITAN ST COLLEGE (1360)  
DENVER, Colorado 80204  
(303) 629-2400

SOLAR RELATED COURSES

*Alternate Energy Sources*

Instructor: Beitz, Robert  
(303) 629-3143

Course Number: 190

Department: Earth Sciences

Program or Curriculum: Alternate Energy  
Sources

Credits: 34

Student Level: All levels

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Alternate  
Energy Sources; Intro. to Solar Energy;

Passive Solar Technology

Number of Times Taught: 1

Average Enrollment: 20

*Economics of Solar Heating*

Instructor: Smith, Howard S.  
(303) 629-3084

Course Number: EET 390

Department: Electronics Engineering  
Technology

Credits: 3

Student Level: Junior or Senior

Duration: 4 Weeks, 7.5 hrs per week

Contact Hours: 30

Classroom: 30

Topics Covered Extensively: Solar  
Economics

Number of Times Taught: 2

Average Enrollment: 21

NORTHERN COLORADO, U OF (1349)  
GREELEY, Colorado 80639  
(303) 351-1890

SOLAR RELATED COURSES

*Applied Solar Energy*

Instructor: Fadner, Willard  
(303) 351-2962

Course Number: 467

Department: Physics

Credits: 3

Student Level: Junior or Senior

Duration: 10 Weeks, 3.0 hrs per week

Contact Hours: 30

Classroom: 30

Topics Covered Extensively: Appropriate  
Technology; Energy Conversion; Energy

Storage; Heat and Energy Transfer;  
 Intro. to Solar Energy; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Elec'l Generation, Central; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 5

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US AIR FORCE ACADEMY (1369)  
 US AIR FORCE ACAD, COLO, Colorado 80840  
 (303) 472-1347

## SOLAR RELATED COURSES

## Solar Energy Applications

Instructor: Eden, Anthony  
 (303) 472-4036

Course Number: CE495  
 Department: Civil Engr., Engr.  
 Mechanics and Materials  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 2.5 hrs per week  
 Contact Hours: 42  
 Classroom: 42  
 Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating  
 Number of Times Taught: 5  
 Average Enrollment: 16

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WESTERN ST COLLEGE COLO (1372)  
 GUNNISON, Colorado 81230  
 (303) 943-0120

## SOLAR RELATED COURSES

Design for Solar Energy in Your Home Heating  
 Instructor: Kowal, Jerry  
 (303) 943-0004  
 Course Number: IA 233  
 Department: Industrial Arts  
 Credits: 2  
 Student Level: Junior or Senior  
 Duration: 2 Weeks, 15.0 hrs per week  
 Contact Hours: 30  
 Classroom: 20  
 Laboratory: 10  
 Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction; Solar Collector Evaluation/Design; Space Heating  
 Number of Times Taught: 7  
 Average Enrollment: 30

## Passive Solar Arch. and Underground Const.

Instructor: Kowal, Jerry  
 (303) 943-2004  
 Course Number: IA 233  
 Department: Industrial Arts  
 Credits: 2  
 Student Level: Junior or Senior  
 Duration: 2 Weeks, 15.0 hrs per week  
 Contact Hours: 30  
 Classroom: 20  
 Laboratory: 10

Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction; Space Heating

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## Community/Junior Colleges

COLO MTH COLLEGE WEST CAM (4506)  
 GLENWOOD SPRINGS, Colorado 81601  
 (303) 945-7481

## SOLAR RELATED COURSES

## Energy: Sources, and Usés

Instructor: Trapani, I. L.  
 Course Number: GSC 156  
 Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy; Wind Power; Central Systems; Wind Power Small Systems

## Sol. Ener. Bldg.-Design and Const.

Instructor: Shore, Ron  
 Course Number: BLO 205  
 Credits: 3  
 Student Level: All levels  
 Duration: 10 Weeks, 3.5 hrs per week  
 Contact Hours: 35  
 Topics Covered Extensively: Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Space Heating; Space Cooling

## Solar and Wind Energy Symposium

Instructor: Dutmers, Gary  
 Course Number: GSC 27051  
 Credits: 1  
 Student Level: All levels

1978-79 National Solar Energy Education Directory

Colorado

Duration: 10 Weeks, 1.0 hrs per week  
 Contact Hours: 10  
 Topics Covered Extensively: Passive Solar Technology; Photovoltaics; Solar Collector Evaluation/Design; Wind Power, Central Systems; Wind Power, Small Systems

**Solar Architecture**

Instructor: Fanta, Greg  
 Course Number: BLD 204  
 Credits: 5  
 Student Level: Freshman or Sophomore  
 Duration: 10 Weeks, 5.0 hrs per week  
 Contact Hours: 50  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Space Cooling

**Solar Energy**

Instructor: Shore, Ron  
 Department: Cent. Ed.  
 Student Level: High School Graduate  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Classroom: 15  
 Number of Times Taught: 3  
 Average Enrollment: 25

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**DENVER NORTH CAMPUS, CC OF WESTMINSTER, Colorado 80030.** (7933)  
 (303) 267-3311

**SOLAR RELATED COURSES**

**Solar Energy**  
 Instructor: Kroll, Fred  
 Course Number: SCI 120  
 Department: Science/Math  
 Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy  
 Number of Times Taught: 3  
 Average Enrollment: 45

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**DENVER RED ROCKS CAM, CC OF GOLDEN, Colorado 80401** (9543)  
 (303) 988-6160

**PROGRAMS AND CURRICULA**

**Solar Energy-Instl. and Main.**  
 Degree: AD, OTHER, Solar Energy-Instl. and Main.  
 Contact: Hilton, Craig/ Hilton, Robert  
 (303) 988-6161  
 Students Taking or Completing Offering:  
 Educator, Researcher,  
 Installer-Residential (Solar System),  
 Plumber, Sheet Metal Worker

**SOLAR RELATED COURSES**

**Advance Solar Controls**  
 Instructor: Klina, John  
 Course Number: S01 236  
 Department: Industrial Occupations  
 Program or Curriculum: Solar Energy-Instal. and Main.  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 30  
 Laboratory: 30  
 Topics Covered Extensively: Solar System Components; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 25

**Altern. Backup Systems for Solar Energy**

Instructor: Hilton, Craig  
 Course Number: S01 238  
 Department: Industrial Occupations  
 Program or Curriculum: Solar Energy-Instal. and Main.  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 30  
 Laboratory: 30  
 Topics Covered Extensively: Alternate Energy Sources

**Basic Sheet Metal for Solar Energy**

Instructor: DuPriest, Don  
 Course Number: SMT 100  
 Department: Industrial Occupations  
 Program or Curriculum: Solar Energy-Instal. and Main.  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 15  
 Laboratory: 45

**Colorado****Solar Energy Research Institute**

**Topics Covered Extensively:** Sheet Metal Techniques; Solar System Components  
**Number of Times Taught:** 3  
**Average Enrollment:** 25

**Basic Solar Controls**

**Instructor:** Hitz, Frank  
 (303) 988-6161  
**Course Number:** S011235  
**Department:** Industrial Occupations  
**Program or Curriculum:** Solar Energy-Instal. and Main.  
**Credits:** 3  
**Student Level:** All levels  
**Duration:** 15 Weeks, 4.0 hrs per week  
**Contact Hours:** 60  
**Classroom:** 15  
**Laboratory:** 45  
**Topics Covered Extensively:** Solar System Components; Solar Systems Testing and Evaluation  
**Number of Times Taught:** 2  
**Average Enrollment:** 30

**Basic Solar Systems**

**Instructor:** Hilton, Craig  
 (303) 988-6161  
**Course Number:** S011220  
**Department:** Industrial Occupations  
**Program or Curriculum:** Solar Energy-Instal. and Main.  
**Credits:** 3  
**Student Level:** All levels  
**Duration:** 15 Weeks, 4.0 hrs per week  
**Contact Hours:** 60  
**Classroom:** 15  
**Laboratory:** 45  
**Topics Covered Extensively:** Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy; Plumbing Techniques; Solar Water Construction; Solar Systems Installation; Domestic Hot Water; Swimming Pool Heating; Space Heating  
**Number of Times Taught:** 6  
**Average Enrollment:** 20

**Blueprint Reading for Constr. Trades**

**Instructor:** Feister, Clarence  
 (303) 988-6161  
**Course Number:** BTP 125  
**Department:** Industrial Div.  
**Program or Curriculum:** Solar Energy-Instal. and Main.  
**Credits:** 4  
**Student Level:** All levels  
**Duration:** 15 Weeks, 4.0 hrs per week  
**Contact Hours:** 68  
**Classroom:** 45  
**Laboratory:** 23  
**Number of Times Taught:** 20  
**Average Enrollment:** 20

**Bricklaying For Construction Trade**

**Instructor:** Gale, Bud  
 (303) 988-6161  
**Course Number:** BR1120

**Industrial Occupations**

**Program or Curriculum:** Solar Energy-instal. and Main.  
**Credits:** 3  
**Student Level:** All levels  
**Duration:** 15 Weeks, 4.0 hrs per week  
**Contact Hours:** 60  
**Classroom:** 15  
**Laboratory:** 45  
**Number of Times Taught:** 8  
**Average Enrollment:** 20

**Carpentry for Construction Trades**

**Instructor:** Hinz, Tim  
 (303) 988-6161  
**Course Number:** CAR 120  
**Department:** Industrial Occupations  
**Program or Curriculum:** Solar Energy-Instal. and Main.  
**Credits:** 3  
**Student Level:** All levels  
**Duration:** 15 Weeks, 4.0 hrs per week  
**Contact Hours:** 60  
**Classroom:** 15  
**Laboratory:** 45  
**Topics Covered Extensively:** Intro. to Solar Energy  
**Number of Times Taught:** 8  
**Average Enrollment:** 20

**Domestic Hot Water**

**Instructor:** Hilton, Craig  
 (303) 988-6161  
**Course Number:** S011227  
**Department:** Industrial Occupations  
**Program or Curriculum:** Solar Energy-Instal. and Main.  
**Credits:** 3  
**Student Level:** All levels  
**Duration:** 15 Weeks, 4.0 hrs per week  
**Contact Hours:** 60  
**Classroom:** 15  
**Laboratory:** 45  
**Topics Covered Extensively:** Solar Systems Installation; Domestic Hot Water  
**Number of Times Taught:** 4  
**Average Enrollment:** 25

**Hot Water Heating-Instal. and Main.**

**Instructor:** Hilton, Robert  
 (303) 988-6161  
**Course Number:** PLU 206  
**Department:** Industrial Occupations  
**Program or Curriculum:** Solar Energy-Instal. and Main.

**Credits:** 3  
**Student Level:** All levels  
**Duration:** 15 Weeks, 4.0 hrs per week  
**Contact Hours:** 60  
**Classroom:** 15  
**Laboratory:** 45  
**Topics Covered Extensively:** Plumbing Techniques  
**Number of Times Taught:** 25  
**Average Enrollment:** 25

***Intro. to Photovoltaic and Wind Energy***

Course Number: SOM 239  
 Department: Industrial Occupations  
 Program or Curriculum: Solar Energy-Instal. and Main.  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 30  
 Laboratory: 30  
 Topics Covered Extensively: Alternate Energy Sources; Photovoltaics; Solar Systems Installation; Elec'l Generation, Small Scale; Wind Power, Small Systems

***Orient. of Tools, Basic Plumb. And Draw.***

Instructor: Hilton, Robert  
 Course Number: PLU 100  
 Department: Industrial Occupations  
 Program or Curriculum: Solar Energy-Instal. and Main.  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 15  
 Laboratory: 45  
 Topics Covered Extensively: Plumbing Techniques  
 Number of Times Taught: 25  
 Average Enrollment: 25

***Passive Solar Systems***

Instructor: Shippee, Paul  
 Course Number: SOM 237  
 Department: Industrial Occupations  
 Program or Curriculum: Solar Energy-Instal. and Main.  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 30  
 Laboratory: 30  
 Topics Covered Extensively: Heat and Energy Transfer; Passive Solar Technology; Solar Systems Design; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 25

***Solar Eng. Tech I***

Instructor: Haugseth, Larry  
 Course Number: SCM221  
 Department: Industrial Occupations  
 Program or Curriculum: Solar Energy-Instal. and Main.  
 Credits: 4  
 Student Level: All levels  
 Duration: 15 Weeks, 4.5 hrs per week

Contact Hours: 68

Classroom: 45

Laboratory: 23

Topics Covered Extensively: Solar Systems Design; Domestic Hot Water; Swimming Pool Heating; Space Heating

Number of Times Taught: 4

Average Enrollment: 25

***Solar Eng. Tech. II***

Instructor: Dahl, Mike  
 Course Number: SOM222  
 Department: Industrial Occupations  
 Program or Curriculum: Solar Energy-Instal. and Main.  
 Credits: 4  
 Student Level: All levels  
 Duration: 15 Weeks, 4.5 hrs per week  
 Contact Hours: 68  
 Classroom: 45  
 Laboratory: 23  
 Topics Covered Extensively: Solar Economics; Solar Systems Design; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling  
 Number of Times Taught: 3  
 Average Enrollment: 25

***Solar Panel Arrays***

Instructor: Hilton, Craig  
 Course Number: SOM226  
 Department: Industrial Occupations  
 Program or Curriculum: Solar Energy-Instal. and Main.  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 15  
 Laboratory: 45  
 Topics Covered Extensively: Solar System Components  
 Number of Times Taught: 6  
 Average Enrollment: 20

***Solar Panel Installations***

Instructor: Hilton, Craig  
 Course Number: SOM 229  
 Department: Industrial Occupations  
 Program or Curriculum: Solar Energy-Instal. and Main.  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 15  
 Laboratory: 45  
 Topics Covered Extensively: Solar Home Construction; Solar Systems Installation

***Solar System Design and Layout***

Instructor: Hilton, Craig  
 Course Number: SOM 229  
 Department: Industrial Occupations  
 Program or Curriculum: Solar Energy-Instal. and Main.  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 4.5 hrs per week

Course Number: SOM225  
 Department: Industrial Occupations  
 Program or Curriculum: Solar Energy-Instal. and Maint.  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 15  
 Laboratory: 45  
 Topics Covered Extensively: Solar Collector Evaluation/Design; Solar Systems Design  
 Number of Times Taught: 6  
 Average Enrollment: 25

**Solar System Maintenance**

Instructor: Hilton, Craig  
 (303) 988-6161  
 Course Number: SOM228  
 Department: Industrial Occupations  
 Program or Curriculum: Solar Energy-Instal. and Maint.  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 15  
 Laboratory: 45  
 Topics Covered Extensively: Solar System Components; Solar Systems Maintenance  
 Number of Times Taught: 2  
 Average Enrollment: 25

**Water Piping Methods**

Instructor: Hilton, Robert  
 (303) 988-6161  
 Course Number: PLU 107  
 Department: Industrial Occupations  
 Program or Curriculum: Solar Energy-Inst. and Maint.  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 15  
 Laboratory: 45  
 Topics Covered Extensively: Plumbing Techniques  
 Number of Times Taught: 25  
 Average Enrollment: 25

**OTERO JUNIOR COLLEGE** (1362)  
 LA JUNTA, Colorado 81082  
 (303) 384-4443

**PROGRAMS AND CURRICULA**

Arch. Tech. - Solar Heating Option  
 Degree: AD-Applied Science  
 Instructor: Nilsen, E. W.  
 (303) 384-4443  
 Students Taking or Completing Offering:  
 Solar Technician/Trade Specialty

**SOLAR RELATED COURSES**

Arch. Tech. - Solar Heating Option  
 Instructor: Nilsen, E. W.  
 (303) 384-4443  
 Department: Construction & Manufacturing  
 Program or Curriculum: Arch. Tech. - Solar Heating Option  
 Student Level: Freshman or Sophomore  
 Duration: 30 Weeks, 12.0 hrs per week  
 Contact Hours: 360  
 Topics Covered Extensively: Energy Storage; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar System Design; Solar Systems Installation; Domestic Hot Water; Space Heating  
 Number of Times Taught: 0

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**TRINIDAD STATE JR COLLEGE** (1368)  
 TRINIDAD, Colorado 81082  
 (303) 846-5531

**SOLAR RELATED COURSES**

**Solar Home Construction**  
 Instructor: Brunelli, Roger F.  
 (303) 846-5521  
 Course Number: BT 280  
 Department: Building Trades  
 Credits: 3  
 Student Level: All levels  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Classroom: 15  
 Topics Covered Extensively: Appropriate Technologies; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Techniques; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar System Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 10  
 Average Enrollment: 25

**Other Educational Institutions**

COLLEGE OF SOLAR ENERGY

Box 397  
Nederland, Colorado 80466

(90540)

SOLAR RELATED COURSES

\*Solar Related Courses

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COLORADO OFFICE OF ENERGY CONSERVATION

1410 Grant St., B-104  
Denver, Colorado 80203

(90440)

SOLAR RELATED COURSES

\*Solar Energy Workshops

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DOMESTIC TECHNOLOGY INSTITUTE

Box 3043  
Evergreen, Colorado 80439

(90550)

SOLAR RELATED COURSES

\*Solar Energy Workshops

Instructors: Billywhite, Malcom

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THE ALTERNATE ENERGY INSTITUTE

Box 3100  
Estes Park, Colorado 80517

(90310)

SOLAR RELATED COURSES

\*Solar Saturday

Topics Covered Extensively: Alternate  
Energy Sources

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**Colleges/Universities**

**CENTRAL CONN ST COLLEGE**  
NEW BRITAIN, Connecticut  
(203) 827-7000

(1378)

**SOLAR RELATED COURSES***Introduction to Energy Processing*

Instructor: Duffy, Joseph  
(203) 827-7378  
Course Number: I.E. 114  
Department: Technology  
Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 6.0 hrs per week  
Contact Hours: 96  
Classroom: 26  
Laboratory: 70  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Wind Power, Central Systems; Wind Power, Small Systems  
Number of Times Taught: 12  
Average Enrollment: 45

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**CONN MAIN CAMPUS, U OF STORRS, Connecticut**  
(203) 486-2000

(129013)

**SOLAR RELATED COURSES**

**Solar Energy**  
Instructor: Pitkin, Edward T.  
(203) 786-2332  
Course Number: 320/295  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42  
Classroom: 42  
Topics Covered Extensively: Appropriate Technology; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling  
Number of Times Taught: 2  
Average Enrollment: 30

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**GRADUATE CHT. OF RP 1 & CNT.**

**ENVIRONMENT & MAN**  
275 Windsor St.  
Hartford, Connecticut 06120

(90260)

**SOLAR RELATED COURSES***\*Some Solar Energy Studies*

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**HARTFORD GRADUATE CENTER**  
HARTFORD, Connecticut  
(203) 549-3600

(2804)

**PROGRAMS AND CURRICULA***\*Environ. Sci. and Tech.*

Contact: Florek, Donald B.  
Students Taking or Completing Offering:  
Architect, Solar Engineer, Other

**SOLAR RELATED COURSES***\*Adv. Solar Energy Systems Design*

Instructor: Florek, Donald B.  
Department: Special Programs  
Program or Curriculum: \*Environ. Sci. and Tech.

Topics Covered Extensively: Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design

**\*Solar Energy**

Instructor: Florek, Donald B.  
Department: Special Programs  
Program or Curriculum: \*Environ. Sci. and Tech.

Topics Covered Extensively: Intro. to Solar Energy

**\*Solar Energy for Bldgs.**

Instructor: Florek, Donald B.  
Department: Special Programs  
Program or Curriculum: \*Environ. Sci. and Tech.

Topics Covered Extensively: Passive Solar Technology; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design

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**NEW HAVEN, UNIVERSITY OF WEST HAVEN, Connecticut**  
(203) 934-6321

(1397)

**SOLAR RELATED COURSES***\*Solar Heating and Cooling*

Department: Special Studies  
Duration: 12 Weeks, 3.0 hrs per week  
Contact Hours: 36  
Topics Covered Extensively: Space Heating; Space Cooling

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**SAINT JOSEPH COLLEGE**  
WEST HARTFORD, Connecticut  
(203) 232-4571

(1409)

**SOLAR RELATED COURSES***Alt. Ener. Resources*

Instructor: Murphy, S. MaryEllen  
(203) 232-4571  
Course Number: SCI ED 607  
Department: Chemistry  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 30  
Laboratory: 30  
Number of Times Taught: 2  
Average Enrollment: 25

*Energy Conversion*

Instructor: Markham, S. Claire/  
Murphy, S. MaryEllen  
(203) 232-4571  
Course Number: SCI ED 507  
Department: Chemistry  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 30  
Laboratory: 30  
Topics Covered Extensively: Alternate  
Energy Sources; Energy Conservation;  
Intro. to Solar Energy; Solar Energy  
Policy Development  
Number of Times Taught: 2  
Average Enrollment: 25

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**WESLEYAN UNIVERSITY**  
MIDDLETON, Connecticut  
(203) 347-9411

(1424)

**SOLAR RELATED COURSES***Field Work - Energy Planning*

Instructor: Haake, Paul  
(203) 347-9411  
Course Number: 417  
Department: Science in Society  
Credits: 3  
Student Level: All levels  
Duration: 13 Weeks, 8.0 hrs per week  
Contact Hours: 104  
Classroom: 98  
Topics Covered Extensively: Energy  
Conversion; Energy Storage; Intro. to  
Solar Energy; Passive Solar Technology;  
Solar Systems Installation  
Average Enrollment: 8

*Field Work - Environ. Planning*

Instructor: Trousdale, William  
(203) 347-9411

Course Number: 413  
Department: College of Science in  
Society  
Credits: 3  
Student Level: All levels  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Classroom: 33  
Topics Covered Extensively: Alternate  
Energy Sources; Heat and Energy  
Transfer; Intro. to Solar Energy  
Number of Times Taught: 3  
Average Enrollment: 11

*Field Work in Energy Planning*

Instructor: Brown, Howard J.  
(203) 347-9411  
Course Number: 412  
Department: Science in Society  
Credits: 3  
Student Level: Junior or Senior  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Biomass Conversion; Passive Solar  
Technology; Solar Economics  
Number of Times Taught: 2  
Average Enrollment: 10

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**WESTERN CONN ST COLLEGE**  
DANBURY, Connecticut  
(203) 792-1400

**SOLAR RELATED COURSES***Alternate Energy Systems*

Instructor: Tucker, Glenn T.  
Student Level: All levels  
Duration: 6 Weeks, 2.5 hrs per week  
Contact Hours: 15  
Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Passive Solar  
Technology; Solar Economics; Solar Home  
Construction; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Installation;  
Solar Systems Testing and Evaluation;  
Space Heating; Space Cooling  
Number of Times Taught: 2  
Average Enrollment: 24

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**YALE UNIVERSITY**  
NEW HAVEN, Connecticut  
(203) 436-4771

**SOLAR RELATED COURSES**

*Energy Conservation Seminar*  
Instructor: Watson, Donald  
(203) 453-6388  
Course Number: C-24 (B)  
Department: Architecture

**Connecticut**

**Solar Energy Research Institute**

Credits: 3  
Student Level: College Graduate  
Duration: 13 Weeks, 2.0 hrs per week  
Contact Hours: 26  
Classroom: 26  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Solar Systems Design; Space Heating; Space Cooling.  
Number of Times Taught: 5  
Average Enrollment: 25

**HVAC and Energy Conservation**

Instructor: Barber, Everett M.  
(203) 436-0550  
Course Number: A-21  
Department: Architecture  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Energy Conservation; Heat and Energy Transfer; Passive Solar Technology.  
Number of Times Taught: 6  
Average Enrollment: 38

**Other Educational Institutions**

**ENERGY ED. SERVICES OF CONNECTICUT (90280)**  
PO Box 224  
Hartford, Connecticut 06103

**SOLAR RELATED COURSES**

\**Solar Ener. for Homes & Bldgs*  
Topics Covered Extensively: Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating

**THAMES VLY STATE TECH C (14f3)**  
NORWICH, Connecticut  
(203) 886-0177

**SOLAR RELATED COURSES**

*Solar Energy/Energy Conservation and Usage*  
Department: Evening Division  
Student Level: High School Graduate  
Duration: 11 Weeks, 3.0 hrs per week  
Contact Hours: 33  
Classroom: 33  
Number of Times Taught: 1  
Average Enrollment: 30

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**Colleges/Universities**

**DELAWARE, UNIVERSITY OF  
NEWARK, Delaware 19711**  
(302) 738-2000

(1431)

**SOLAR RELATED COURSES***Photovoltaic Energy Conversion*

Instructor: Boer, Karl W.  
(302) 738-8048  
Department: Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively:  
Photovoltaics  
Number of Times Taught: 3  
Average Enrollment: 15

*Solar Energy Conversion*

Instructor: Boer, Karl W.  
(302) 738-8048  
Course Number: 467/667  
Department: Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Laboratory: 3  
Topics Covered Extensively: Energy  
Conversion; Materials Research;  
Photovoltaics  
Number of Times Taught: 3  
Average Enrollment: 20

*Solar Thermal Conversion*

Instructor: Gureri, Selauk  
(302) 738-8160  
Course Number: 667  
Department: Mechanical and  
Aerospace Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Topics Covered Extensively: Energy  
Conversion; Energy Storage; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Solar System Components; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Space Heating  
Number of Times Taught: 2  
Average Enrollment: 45

**NEWCASTLE COUNTY VOCATIONAL TECHNICAL**

**SCHOOL** (90370)  
1417 Newport Rd.  
Wilmington, Delaware 19804

**PROGRAMS AND CURRICULA***\*Solar Heating of Buildings***SOLAR RELATED COURSES***\*Solar Heating of Buildings*

Program or  
Curriculum: \*Solar Heating of  
Buildings  
Contact Hours: 60  
Topics Covered Extensively: Energy  
Conversion; Energy Storage; Intro. to  
Solar Energy; Solar System Components;  
Solar Economics; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Installation;  
Solar Systems Maintenance; Solar  
Systems Testing and Evaluation

\* \* \* \* \*

**Vocational/Technical Colleges**

## District of Columbia

## Solar Energy Research Institute

### Colleges/Universities

CATHOLIC U OF AMERICA (1437)  
WASHINGTON, District of Colombia 20064  
(202) 635-5000

### SOLAR RELATED COURSES

Graduate Research in Solar Energy  
Department: Chemical Eng'r

Solar Energy and Thermal Radiation

Instructor: Whang, Y. C.  
(202) 635-5170

Course Number: ME527

Department: Mechanical Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Classroom: 36

Laboratory: 6

Topics Covered Extensively: Energy  
Conversion; Energy Storage; Heat and  
Energy Transfer; Passive Solar  
Technology; Solar Systems Design

Number of Times Taught: 5

Average Enrollment: 15

Program or Curriculum: \*Energy Resources & Environ  
Credits: 3  
Student Level: College Graduate  
Topics Covered Extensively: Energy  
Conversion; Solar Economics; Elec'l  
Generation, Central; Elec'l Generation,  
Small Scale; Wind Power, Central  
Systems; Wind Power, Small Systems

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### HOWARD UNIVERSITY

WASHINGTON, District of Colombia 20059  
(202) 636-6040

### SOLAR RELATED COURSES

Energy and Power

Instructor: Walker, M. L.  
(202) 636-6565

Course Number: 304-428

Department: Mechanical Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 13 Weeks, 3.0 hrs per week

Contact Hours: 39

Classroom: 39

Topics Covered Extensively: Materials  
Research; Photovoltaics; Solar  
Economics

Number of Times Taught: 11

Process Engineering in Energy Systems

Instructor: Rao, M. Gopala  
(202) 636-6624

Course Number: 305-413

Department: Chemical Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 13 Weeks, 3.0 hrs per week

Contact Hours: 39

Classroom: 39  
Topics Covered Extensively: Energy  
Conservation; Energy Storage

Average Enrollment: 25

\* \* \* \* \*

### Other Educational Institutions

NATIONAL TRAINING FUND (190360)  
1900 "L" Street NW, Suite 405,  
Washington, District of Colombia 20036

### PROGRAMS AND CURRICULA

\*Sheet Metal - Apprentice, Journeyman

Contact: Harrington, Mr.

(202) 833-9543

\* \* \* \* \*

Florida

Solar Energy Research Institute

Colleges/Universities

BARRY COLLEGE  
MIAMI, Florida 33161  
(305) 758-3392

SOLAR RELATED COURSES

Energy Economics

Instructor: Wryman, Mark  
(305) 759-7233  
Course Number: ECO 302  
Department: Continuing Education  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Intro. to Solar Energy; Marketing/Market Analysis; Passive Solar Technology; Solar Energy Policy Development; Solar Economics; Solar Home Construction; Solar Law/Legislation; Domestic Hot Water; Swimming Pool Heating; Elec'l Generation; Central; Elec'l Generation; Small Scale; Space Cooling; Wind Power; Central Systems; Wind Power, Small Systems  
Number of Times Taught: 1  
Average Enrollment: 12

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FLORIDA INST TECHNOLOGY  
MELBOURNE, Florida 32901  
(305) 723-3701

SOLAR RELATED COURSES

Design of Solar Conversion Systems  
Instructor: Alkasab, K. A.  
(305) 723-3701  
Course Number: ME 5037  
Department: Mechanical Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Heat and Energy Transfer; Solar System Components; Solar Systems Design; Elec'l Generation, Central; Space Heating; Wind Power; Central Systems; Wind Power, Small Systems  
Number of Times Taught: 2  
Average Enrollment: 10

Prin. of Solar Energy Conversion

Instructor: Alkasab, K. A.  
(305) 723-3701  
Course Number: ME 5035  
Department: Mechanical Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 10 Weeks, 3.0 hrs per week

Contact Hours: 30  
Classroom: 30

Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Elec'l Generation, Central; Space Cooling

Number of Times Taught: 1  
Average Enrollment: 6

Solar Energy Conversion Systems

Instructor: Alkasab, K. A.  
(305) 723-3701  
Course Number: ME 5036  
Department: Mechanical Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Heat and Energy Transfer; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Elec'l Generation, Central; Space Cooling  
Number of Times Taught: 2  
Average Enrollment: 12

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FLORIDA INTERNATIONAL U (9635)  
MIAMI, Florida 33199  
(305) 552-2731

PROGRAMS AND CURRICULA

Solar Energy Technology  
Degree: MS, Master of Science  
Contact: Leonard, Rene J.  
Students Taking or Completing Offering:  
Solar Engineer

SOLAR RELATED COURSES

Advanced Solar Energy

Instructor: Leonard, Rene J.  
(305) 552-2807  
Department: Technology  
Program or Curriculum: Solar Energy Technology  
Credits: 5  
Student Level: Junior or Senior  
Duration: 10 Weeks, 5.0 hrs per week  
Contact Hours: 50  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling  
Number of Times Taught: 10  
Average Enrollment: 25

**Energy Systems**

Instructor: Leonard, Rene J.  
(305) 552-2807

Department: Technology

Program or Curriculum: Solar Energy Technology

Credits: 5

Student Level: Junior or Senior

Duration: 10 Weeks, 5.0 hrs per week

Contact Hours: 50

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

Number of Times Taught: 10

Average Enrollment: 25

**Solar Energy in Bldg. Design**

Instructor: Leonard, Rene J.  
(305) 552-2807

Department: Technology

Program or Curriculum: Solar Energy Technology

Credits: 5

Student Level: Junior or Senior

Duration: 10 Weeks, 5.0 hrs per week

Contact Hours: 50

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

Number of Times Taught: 10

Average Enrollment: 25

**FLORIDA TECHNOLOGICAL U**  
ORLANDO, Florida 32816  
(305) 275-2351

**SOLAR RELATED COURSES**

**Solar Energy Systems**

Instructor: Evans, Ronald  
(305) 275-2416

Course Number: ENL6416

Department: Engin., Mech. Engin. and Aerosp. Sci.

Credits: 4

Student Level: Junior or Senior

Duration: 12 Weeks, 4.0 hrs per week

Contact Hours: 48

Classroom: 48

Topics Covered Extensively: Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling

Number of Times Taught: 1

Average Enrollment: 27

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**FLORIDA, UNIVERSITY OF** (1535)  
GAINESVILLE, Florida 32611  
(904) 392-3261

**PROGRAMS AND CURRICULA**

**Mechanical Eng'r**  
Degree: MS, Mechanical Engineering

**SOLAR RELATED COURSES**

**Courses in Wind, Methane, Greenhouse, Solar**  
Department: Mechanical Engineering  
Program or Curriculum: \*Mechanical Eng'r  
Student Level: All levels  
Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Space Heating; Wind Power; Small Systems

**Graduate Research Courses**

Department: Mechanical Eng'r  
Program or Curriculum: \*Mechanical Eng'r  
Student Level: College Graduate

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**MIAMI, UNIVERSITY OF** (1536)  
CORAL GABLES, Florida 33124  
(305) 284-2211

**SOLAR RELATED COURSES**

**Fundamentals of Solar Energy Utilization**  
Instructor: Poteat, L./ Olsen, T.  
(305) 284-2571

Course Number: MEN 510  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Energy Storage; Intro. to Solar Energy; Photovoltaics; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Elec'l Generation, Central; Elec'l Generation, Small Scale; Space Heating; Space Cooling

Number of Times Taught: 2  
Average Enrollment: 12

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Florida

Solar Energy Research Institute

NORTH FLORIDA, U OF  
JACKSONVILLE, Florida 32216  
(904) 646-2666

SOLAR RELATED COURSES

*Energy: Past, Present and Future*  
Instructor: Bowman, Ray  
(904) 646-2518  
Course Number: BSC 9930AB  
Department: Arts and Sciences/Natural Sciences  
Credits: 5  
Student Level: Junior or Senior  
Duration: 10 Weeks, 5.0 hrs per week  
Contact Hours: 50  
Topics Covered Extensively: Alternate Energy Sources  
Number of Times Taught: 4

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WEST FLORIDA, U OF (3955)  
PENSACOLA, Florida 32504  
(904) 476-9500

PROGRAMS AND CURRICULA

*Master of Public Administration*  
Degree: Public Administration  
Contact: Skelton, Luther  
(904) 476-9500

SOLAR RELATED COURSES

*Energy Systems*  
Instructor: Salomon, Jack D.  
(904) 476-9500  
Course Number: PHD 6934  
Department: Political Science  
Program or Curriculum: Master of Public Administration  
Credits: 5  
Student Level: College Graduate  
Duration: 10 Weeks, 5.0 hrs per week  
Contact Hours: 50  
Classroom: 50  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro to Solar Energy

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Community/Junior Colleges

BREVARD CHTY COLLEGE  
COCOA, Florida 32922  
(305) 632-1111

(1470)

PROGRAMS AND CURRICULA

*Solar Eng'r Technology*  
Degree: AD, Appl. Sci. - Sol. Eng'r Tech  
Contact: Donnell, Nelson  
(305) 532-1111  
Students Taking or Completing Offering:  
Solar Technician

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EDISON COMMUNITY COLLEGE  
FORT MYERS, Florida 33901  
(813) 481-2121

(1477)

SOLAR RELATED COURSES

*Alternate Energy Sources*  
Instructor: Herst, Lee  
(813) 481-2121  
Department: Basic Science  
Credits: 4  
Student Level: High School Graduate  
Duration: 16 Weeks, 4.0 hrs per week  
Contact Hours: 64  
Classroom: 48  
Laboratory: 16  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro to Solar Energy

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GULF COAST CHTY COLLEGE  
PANAMA CITY, Florida 32401  
(904) 769-1551

(1490)

PROGRAMS AND CURRICULA

*Solar Energy/Solar Systems*  
Degree: AD, Science  
Contact: Jones, Robert C.  
(904) 769-1551

SOLAR RELATED COURSES

*Solar Energy*  
Instructor: Stotz, Robert/ Jones, Robert  
(904) 769-1551  
Course Number: ETII-1101  
Department: Tech.Ed. - A/C Heat. and Refrig.  
Program or Curriculum: Solar Energy/Solar Systems  
Credits: 3  
Student Level: All levels  
Duration: 17 Weeks; 3.0 hrs per week  
Contact Hours: 51  
Topics Covered Extensively: Solar System

1978-79 National Solar Energy Education Directory

Florida

Components; Solar Home Construction;  
 Solar Collector Evaluation/Design.  
 Number of Times Taught: 1  
 Average Enrollment: 29

**Solar Systems**  
 Instructor: Stotz, Robert/ Jones, Robert  
 (904) 769-1551  
 Course Number: ETM 2102  
 Department: Tech. Ed. - A/C Heat, and Refrig.

Program or Curriculum: Solar Energy Solar Systems  
 Credits: 3  
 Student Level: All levels  
 Duration: 17 Weeks, 3.0 hrs per week  
 Contact Hours: 51  
 Topics Covered Extensively: Heat and Energy Transfer; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling  
 Number of Times Taught: 1  
 Average Enrollment: 24

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 MIAMI-DADE CHTY COLLEGE  
 MIAMI, Florida 33176  
 (305) 596-1211

(1506)

PROGRAMS AND CURRICULA

**Air Conditioning Engineering Technology**

Degree: AD, Science  
 Contact: Succop, William  
 (305) 685-4564

Students Taking or Completing Offerings:  
 Architect, Installer-Residential (Solar System); Installer-Commercial (Solar System); Solar Technician

SOLAR RELATED COURSES

**Solar Energy Fundamentals**

Instructor: Cleland, George  
 (305) 685-4206  
 Course Number: ETM 2706  
 Department: Air Conditioning Engineering Technology  
 Program or Curriculum: Air Conditioning Engineering Technology  
 Credits: 3  
 Student Level: High School Graduate  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Plumbing Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design;

Solar Systems Installation; Domestic Hot Water; Swimming Pool Heating  
**Solar Energy Systems, Commercial**  
 Instructor: Cleland, George  
 (305) 685-4206  
 Course Number: ETM 2758 C  
 Department: Air Conditioning Engineering Technology  
 Program or Curriculum: Air Conditioning Engineering Technology  
 Credits: 3  
 Student Level: High School Graduate  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 30  
 Laboratory: 30  
 Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Plumbing Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Swimming Pool Heating

**Solar Energy Systems, Residential**  
 Instructor: Cleland, George  
 (305) 685-4206  
 Course Number: ETM 2756C  
 Department: Air Conditioning Engineering Technology

Program or Curriculum: Air Conditioning Engineering Technology  
 Credits: 3  
 Student Level: High School Graduate  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 30  
 Laboratory: 30  
 Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Plumbing Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Swimming Pool Heating

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 PENSACOLA JUNIOR COLLEGE  
 PENSACOLA, Florida 32504  
 (904) 476-5410

PROGRAMS AND CURRICULA

**Solar Energy Technology**

Degree: AD, Energy Tech.  
 Certificate of Completion  
 Contact: Lowery, Stanley  
 (904) 476-5410

Florida

Solar Energy Research Institute

**SOLAR RELATED COURSES**

**Res. Design and Installation**

Instructor: Lowery, Stanley  
(904) 476-5410  
Department: Industrial Technology  
Program or Curriculum: Solar Energy Technology  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 4.0 hrs per week  
Contact Hours: 64  
Classroom: 32  
Laboratory: 32  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

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**SANTA FE CHTY COLLEGE**

GAINESVILLE, Florida 32601  
(904) 377-5161

(1519)

**SOLAR RELATED COURSES**

**Principles of Solar Heat**

Instructor: Roy, Russell  
(904) 377-5161  
Course Number: ACT 1840  
Department: Industrial Education  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 30  
Laboratory: 15  
Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling  
Number of Times Taught: 6  
Average Enrollment: 20

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**VALENCIA CITY COLLEGE**

ORLANDO, Florida 32802  
(305) 299-5000

(6750)

**SOLAR RELATED COURSES**

**Energy**

Instructor: McCord, William  
(305) 299-5000  
Course Number: PS-290  
Department: Science  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42  
Classroom: 30  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Domestic Hot Water  
Number of Times Taught: 1  
Average Enrollment: 12

**Solar Energy for the Home-owner**

Instructor: McCord, William M.  
(305) 299-5000  
Department: Open Campus/Continuing Edu.  
Student Level: All levels  
Duration: 1 Weeks, 6.0 hrs per week  
Contact Hours: 6  
Classroom: 2  
Topics Covered Extensively: Intro. to Solar Energy; Domestic Hot Water

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**Vocational/Technical Colleges**

**PINELLAS VO-TECH INSTITUTE**

(90320)

6100 154th Ave. North

Clearwater, Florida 33516

**SOLAR RELATED COURSES**

\*Household Ener. Cons./Sol. Energy  
Topics Covered Extensively: Energy Conservation; Domestic Hot Water

\*Solar Energy Heating and Cooling

Duration: 9 Weeks  
Topics Covered Extensively: Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling

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**SOUTH FLORIDA TECHNICAL INSTITUTE (90020)**  
201 W. Sunrise Blvd.  
Ft. Lauderdale, Florida 33311  
(305) 764-3432

#### PROGRAMS AND CURRICULA

##### *Energy Conversion Systems*

Contact: Linne, William L.  
(305) 764-3432

Students Taking or Completing Offering:  
Mechanical or Electrical Contractor,  
Installer-Residential (Solar System),  
Trade Specialty

#### SOLAR RELATED COURSES

##### *Air Cond., Refrig. and Hdg. Appliances*

Instructor: Appelman, Louis  
(305) 764-3432

Department: Training

Program or Curriculum: Energy Conversion  
Systems

Student Level: High School Graduate  
Duration: 5 Weeks, 30.0 hrs per week

Contact Hours: 150

Classroom: 100

Laboratory: 50

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Conversion;  
Energy Storage; Heat and Energy  
Transfer; Intro. to Solar Energy; Solar  
System Components; Solar Home  
Construction; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Installation;  
Solar Systems Maintenance; Solar  
Systems Testing and Evaluation;  
Domestic Hot Water; Space Heating;  
Space Cooling

Number of Times Taught: 3

Average Enrollment: 10

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#### Other Educational Institutions

**FLORIDA SOLAR ENERGY CENTER (90100)**  
300 State Rd. 401  
Cape Canaveral, Florida 32920

#### SOLAR RELATED COURSES

\*Short Courses, Workshops, Seminars

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Georgia

Solar Energy Research Institute

Colleges/Universities

BRENUA COLLEGE  
GAHNEVILLE, Georgia 30501  
(404) 532-4341

(1556)

SOLAR RELATED COURSES

Ecology

Instructor: Andrews, Charles L.  
(404) 532-4341  
Course Number: BY 303  
Department: Math/Sciences  
Credits: 5  
Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 6.0 hrs per week  
Contact Hours: 60  
Classroom: 40  
Laboratory: 20  
Average Enrollment: 20

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GA INST OF TECHN MAIN CAM  
ATLANTA, Georgia 30332  
(404) 894-2000

(1569)

SOLAR RELATED COURSES

Solar Energy Engineering

Instructor: Williams, J. Richard  
(404) 894-3351  
Course Number: ME 6360  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 11 Weeks, 3.0 hrs per week  
Contact Hours: 60  
Classroom: 30  
Laboratory: 6

Topics Covered Extensively: Alternative  
Energy Sources; Energy Cookers  
Energy Storage; Heat and Energy  
Transfer; Intro. to Solar Energy  
Passive Solar Technology; Plumbing  
Techniques; Solar System Components;  
Solar Economics; Solar Home  
Construction; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Installation  
Solar Systems Maintenance; Solar  
Systems Testing and Evaluation  
Domestic Hot Water; Swimming Pool  
Heating; Elec'l Generation; Central  
Elec'l Generation; Small Scale Process  
Heat, Agricultural; Process Heat,  
Industrial; Space Heating; Space  
Cooling  
Number of Times Taught: 4  
Average Enrollment: 30

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GA INST TECHN- SOUTHERN TECH

(1570)

MARIETTA, Georgia 30060  
(404) 424-7200

SOLAR RELATED COURSES

Solar Heating and Cooling of Residences

Instructor: Newman, W.S.  
(404) 424-7255  
Course Number: 444  
Department: Architectural  
Engineering Technology  
Credits: 5  
Student Level: Junior or Senior  
Duration: 10 Weeks, 6.0 hrs per week  
Contact Hours: 60  
Classroom: 40  
Laboratory: 20  
Topics Covered Extensively: Energy  
Storage; Intro. to Solar Energy  
Passive Solar Technology; Solar Home  
Construction; Solar Systems Design;  
Solar Systems Installation; Domestic  
Hot Water; Swimming Pool; Space  
Heating; Space Cooling  
Number of Times Taught: 10  
Average Enrollment: 25

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GA. UNIVERSITY OF  
ATLANTA, Georgia 30302  
(404) 542-3030

SOLAR RELATED COURSES

Architecture Design Studio (Introductory Architecture)

Instructor: Linley, J.W./Wohl,  
Michael  
(404) 542-1816  
Course Number: LAR 320  
Department: Environmental Design  
Credits: 5  
Student Level: Junior or Senior  
Duration: 10 Weeks, 5.0 hrs per week  
Contact Hours: 50  
Classroom: 10  
Laboratory: 40  
Number of Times Taught: 10  
Average Enrollment: 25

Landscape Ecology

Instructor: Fisher, H.R.  
(404) 542-1816  
Course Number: LAR 323  
Department: Environmental Design  
Credits: 5  
Student Level: College Graduate  
Duration: 10 Weeks, 5.0 hrs per week  
Contact Hours: 50  
Classroom: 10  
Laboratory: 40  
Number of Times Taught: 10  
Average Enrollment: 20

Nursery Management I

Instructor: Tinga, J.H.  
(404) 542-2471  
Course Number: HORT 363A

Department: Horticulture  
 Credits: 2  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 2.0 hrs per week  
 Contact Hours: 20  
 Classroom: 10  
 Laboratory: 10  
 Number of Times Taught: 10  
 Average Enrollment: 25

**Nursery Management II**

Instructor: Tinga, J.H.  
 Course Number: HORT 367B  
 Department: Horticulture  
 Credits: 2  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 2.0 hrs per week  
 Contact Hours: 20  
 Classroom: 10  
 Laboratory: 10  
 Number of Times Taught: 10  
 Average Enrollment: 25

**Nursery Management III**

Instructor: Tinga, J.H.  
 Course Number: HORT 363C  
 Department: Horticulture  
 Credits: 2  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 2.0 hrs per week  
 Contact Hours: 20  
 Classroom: 10  
 Laboratory: 10  
 Number of Times Taught: 10  
 Average Enrollment: 25

**Public Policy, Energy and Environment**  
 Instructor: Regens, James L.  
 Course Number: POL 451B  
 Department: Political Science  
 Credits: 5  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 5.0 hrs per week  
 Contact Hours: 50  
 Classroom: 40  
 Laboratory: 10

**Solar Energy Thermal Processes**  
 Instructor: Wilson, J.D./ McLendon, B.D.  
 Course Number: 802  
 Department: Agricultural Engineering  
 Credits: 5  
 Student Level: College Graduate  
 Duration: 10 Weeks, 5.0 hrs per week  
 Contact Hours: 50  
 Classroom: 21  
 Laboratory: 29  
 Topics Covered Extensively: Heat and Energy Transfer; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water  
 Number of Times Taught: 2

Average Enrollment: 8

**Utilization of Renewable Energy Resources**

Instructor: McLendon, B. Derrell  
 (404) 549-7527  
 Department: Agricultural Engineering  
 Credits: 15  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 5.0 hrs per week  
 Contact Hours: 50  
 Classroom: 34  
 Laboratory: 16

Topics Covered Extensively: Alternate Energy Sources; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Elec. Generation, Small Scale

**Community/Junior Colleges**

BRUSHICK JUNIOR COLLEGE (1558)  
 BRUSHICK, Georgia 31520  
 (912) 264-7274

**PROGRAMS AND CURRICULA****Vocational- Technical**

DEKALB COMMUNITY COLLEGE (1562)  
 CLARKSTON, Georgia 30021  
 (404) 292-3994

**PROGRAMS AND CURRICULA**

**Solar Heating**  
 Degree: Solar Heating  
 Contact: Erickson, Glenn  
 (404) 296-1525

Students Taking, Completing Offering:  
 Installer-Residential (Solar System),  
 Solar Technician, Electrician, Plumber,  
 Sheet Metal Worker

**SOLAR RELATED COURSES**

**Solar Heating**  
 Instructor: Pendland, William D.  
 (404) 292-1525  
 Department: Heating/Air Conditioning  
 Program:  
 Curriculum: Solar Heating  
 Student Level: All Levels  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 300  
 Classroom: 200  
 Laboratory: 100

**Colleges/Universities**

**GUAM, UNIVERSITY OF  
AGANA, Guam 96910**

(3935)

**SOLAR RELATED COURSES:**

**Seminar**

**Instructor:** Smith, Douglas  
(671) 234-2921

**Course Number:** BI 691

**Department:** Arts & Science,  
Biology

**Credits:** 1

**Student Level:** College Graduate

**Duration:** 15 Weeks, 1.0 hrs per week

**Contact Hours:** 15

**Classroom:** 15

**Average Enrollment:** 5

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**Hawaii****Solar Energy Research Institute****Colleges/Universities**

**HAWAII AT MANOA, U OF** (1610)  
**HONOLULU, Hawaii 96822**  
**(808) 948-7837**

**SOLAR RELATED COURSES***Environmental Education*

Instructor: Boyer, Wm. H.  
 Course Number: (808) 948-7817  
 Department: ED EF 686  
 Credits: Education  
 Student Level: 3  
 Duration: All levels  
 Contact Hours: 14 Weeks, 3.0 hrs per week  
 Classroom: 42  
 Topics Covered Extensively: Alternate  
 Energy Sources; Appropriate Technology;  
 Energy Conservation  
 Number of Times Taught: 3  
 Average Enrollment: 20

*Seminar on Solar Energy*

Instructor: Garrett, Alfred J.  
 Course Number: (808) 948-7577  
 Department: CE499AR477  
 Credits: Arts and Sciences,  
 Meteorology  
 Student Level: 1  
 Duration: All levels  
 Contact Hours: 14 Weeks, 1.0 hrs per week  
 Classroom: 14  
 Topics Covered Extensively: Alternate  
 Energy Sources; Appropriate Technology;  
 Domestic Hot Water; Swimming Pool  
 Heating; Elec'l Generation, Central;  
 Space Heating; Space Cooling; Wind  
 Power, Central Systems  
 Number of Times Taught: 1  
 Average Enrollment: 6

*Solar Energy and Architecture*

Instructor: Falicoff, W.  
 Course Number: (808) 949-6845  
 Department: ARCH 477  
 Credits: Arts and Sciences,  
 Architecture  
 Student Level: 3  
 Duration: Junior or Senior  
 Contact Hours: 14 Weeks, 3.0 hrs per week  
 Classroom: 42  
 Laboratory: 17  
 Topics Covered Extensively: Passive  
 Solar Technology; Solar Economics;  
 Solar Systems Design; Domestic Hot  
 Water; Space Heating; Space Cooling

*Solar Energy Measurements and Surveys*

Instructor: Garrett, Alfred J.  
 Course Number: (808) 948-7577  
 Department: MET 752  
 Credits: Arts and Sciences,  
 Meteorology  
 Student Level: 3  
 Duration: College Graduate  
 Classroom: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Classroom: 17

Laboratory: 25

Topics Covered Extensively: Intro. to  
 Solar Energy; Solar Systems Design;  
 Solar Systems Maintenance

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**HAWAII HONOLULU CC, U OF****HONOLULU, Hawaii 96817**  
**(808) 845-9211****SOLAR RELATED COURSES***Energy: Its Sources and Utilization*

Course Number: ME 210  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: All levels  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 42  
 Number of Times Taught: 3

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**Community/Junior Colleges**

**HAWAII KAUAI CC, U OF** (1614)  
**LIHUE, Hawaii 96766**  
**(808) 245-8311**

**SOLAR RELATED COURSES***Alternate Sources of Energy*

Instructor: Mock, Marshall  
 Course Number: (808) 245-8250  
 Department: SCI 097  
 Credits: Math, Science & Tech.  
 Student Level: 3  
 Duration: Freshman or Sophomore  
 Contact Hours: 15 Weeks, 3.0 hrs per week  
 Classroom: 45  
 Topics Covered Extensively: Alternate  
 Energy Sources; Appropriate Technology;  
 Intro. to Solar Energy; Solar System  
 Components; Solar Collector  
 Evaluation/Design; Solar Systems  
 Design; Domestic Hot Water; Elec'l  
 Generation, Small Scale; Wind Power,  
 Small Systems  
 Number of Times Taught: 1  
 Average Enrollment: 30

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1978-79 National Solar Energy Education Directory

Idaho

**Colleges/Universities**

**IDAKO STATE UNIVERSITY**  
POCATELLO, Idaho 83201  
(208) 236-0211

(1620)

**SOLAR RELATED COURSES**

*Intro to Solar Energy*

Instructor: Corey, L.E.  
(208) 236-3975

Course Number: ENG/PHY 299

Department: Engr/Physics

Credits: 2

Student Level: All levels

Duration: 15 Weeks, 2.0 hrs per week

Contact Hours: 30

Topics Covered Extensively: Space

Heating

Number of Times Taught: 46

Average Enrollment: 23

*Intro. to Solar Energy*

Instructor: Corey, L.E.  
(208) 236-3975

Course Number: ENG/PHY 299

Department: Eng./Physics

Credits: 2

Student Level: All levels

Duration: 15 Weeks, 2.0 hrs per week

Contact Hours: 30

Number of Times Taught: 46

Average Enrollment: 23

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**IDAKO, UNIVERSITY OF**  
MOSTOW, Idaho 83843  
(208) 885-6111

(1626)

**PROGRAMS AND CURRICULA**

*Power Technology*

Degree: BS, Science in Education  
Contact: Cassetto, James M.  
(208) 885-6492

Students Taking or Completing Offering:  
Educator

*Solar Energy*

Degree: PhD, MS, BS, Mech. or Elec.  
Engng.  
Contact: Warner, R. E.  
(208) 885-6579

Students Taking or Completing Offering:  
Architect, Researcher, Solar Engineer

*Solar Energy Workshop*

Degree:  
Contact: Cassetto, James  
(208) 885-6492

Students Taking or Completing Offering:  
Educator, Contractor, Do-it-yourself,  
Homeowner

**SOLAR RELATED COURSES**

*Alternate Energy*

Instructor: Cassetto, James  
(208) 885-6492

Course Number: 350  
Department: Education, Industrial Ed.

Program on:  
Curriculum:  
Credits: 3  
Student Level: Junior or Senior  
Duration: 18 Weeks, 6.0 hrs per week  
Contact Hours: 108  
Classroom: 54  
Laboratory: 50

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar Energy Policy Development; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Elec'l Generation; Central; Elec'l Generation, Small Scale; Process Heat, Agricultural; Process Heat, Industrial; Space Heating; Space Cooling; Wind Power, Central Systems; Wind Power, Small Systems

Average Enrollment: 50

*Alternate Energy Resources*

Instructor: Hager, Wayne  
(208) 885-6438

Course Number: ES404

Department: Engineering

Program on:  
Curriculum: Solar Energy Workshop  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design

Number of Times Taught: 3

Average Enrollment: 60

*Arch. - Environmental Control System*

Instructor: Evans, Ronald D.  
(208) 885-6272

Course Number: 453

Department: Art and Architecture

Credits: 3  
Student Level: Junior or Senior  
Duration: 17 Weeks, 3.0 hrs per week  
Contact Hours: 51

**Classroom:** 51  
**Topics Covered Extensively:** Appropriate Technology; Energy Conservation; Heat and Energy Transfer; Passive Solar Technology; Plumbing Techniques; Space Heating; Space Cooling  
**Number of Times Taught:** 4  
**Average Enrollment:** 65

**Arch. - Solar Energy Design**

**Instructor:** Eder, Anton  
 (208) 885-6272  
**Course Number:** 404  
**Department:** Art and Architecture  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 16 Weeks, 3.0 hrs per week  
**Contact Hours:** 48  
**Classroom:** 48  
**Topics Covered Extensively:** Energy Conservation; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
**Number of Times Taught:** 2  
**Average Enrollment:** 100

**Direct Energy Conversion**

**Instructor:** Hagen, Jack I.  
 (208) 885-6555  
**Course Number:** EE 420  
**Department:** Electrical Engineering  
**Program or Curriculum:** Solar Energy Workshops  
**Credits:** 3  
**Student Level:** College Graduate  
**Duration:** 18 Weeks, 3.0 hrs per week  
**Contact Hours:** 54  
**Classroom:** 54  
**Topics Covered Extensively:** Alternate Energy Sources; Energy Conservation; Energy Conversion; Intro. to Solar Energy; Photovoltaics; Solar Collector Evaluation/Design; Elec'l Generation, Central; Elec'l Generation, Small Scale  
**Number of Times Taught:** 1  
**Average Enrollment:** 10

**Power Technology**

**Instructor:** Cassetto, James M.  
 (208) 885-6492  
**Course Number:** 316  
**Department:** Industrial Educ.  
**Program or Curriculum:** Power Technology  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 18 Weeks, 6.0 hrs per week  
**Contact Hours:** 108  
**Classroom:** 54  
**Laboratory:** 54  
**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Elec'l Generation, Small Scale; Process Heat, Industrial; Space Heating

**Photovoltaics; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Elec'l Generation, Small Scale; Process Heat, Industrial; Space Heating; Wind Power, Central Systems; Wind Power, Small Systems**  
**Number of Times Taught:** 1  
**Average Enrollment:** 15

**Solar Energy Systems**

**Instructor:** Warner, R. E.  
 (208) 885-6579  
**Course Number:** MEE 435  
**Department:** Mechanical Engineering  
**Program or Curriculum:** Solar Energy  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 18 Weeks, 3.0 hrs per week  
**Contact Hours:** 54  
**Classroom:** 52  
**Laboratory:** 2  
**Topics Covered Extensively:** Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Elec'l Generation, Central; Space Heating  
**Number of Times Taught:** 2  
**Average Enrollment:** 18

**Workshop Solar Energy Tech.**

**Instructor:** Cassetto, James  
 (208) 885-6492  
**Course Number:** 403  
**Department:** Education Industrial Ed.  
**Program or Curriculum:** Power Technology  
**Credits:** 1  
**Student Level:** All levels  
**Duration:** 1 Weeks, 36.0 hrs per week  
**Contact Hours:** 36  
**Classroom:** 18  
**Laboratory:** 18

**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Biomass Conversions; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Elec'l Generation, Small Scale; Process Heat, Industrial; Space Heating  
**Number of Times Taught:** 3  
**Average Enrollment:** 35

Illinois

Solar Energy Research Institute

Colleges/Universities

BRADLEY UNIVERSITY (1641)  
PEORIA, Illinois 61625  
(309) 676-7611

SOLAR RELATED COURSES

Solar Energy Application  
Instructor: Safdari, Y. B.  
(309) 676-7611  
Course Number: ME 409  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 30  
Laboratory: 15  
Topics Covered Extensively: Intro. to Solar Energy; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling  
Number of Times Taught: 3  
Average Enrollment: 15

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CHICAGO STATE UNIVERSITY (1694)  
CHICAGO, Illinois 60628  
(312) 995-2000

SOLAR RELATED COURSES

Conservation of Energy Resources  
Instructor: Cutler, Irving  
(312) 995-2186  
Course Number: 345  
Department: Geography  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage  
Number of Times Taught: 2  
Average Enrollment: 18

Conservation of Natural Resources  
Instructor: Cutler, Irving  
(312) 995-2186  
Course Number: 250  
Department: Geography  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Storage  
Number of Times Taught: 7  
Average Enrollment: 19

Energy and Man  
Instructor: Treptow, Richard  
(312) 995-2180  
Course Number: 101  
Department: Physical Sciences  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy  
Number of Times Taught: 9  
Average Enrollment: 103

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CHICAGO, UNIVERSITY OF (1774)  
CHICAGO, Illinois 60637  
(312) 753-1234

SOLAR RELATED COURSES

\*Modern Optics  
Instructor: Winston, Roland  
Department: Physics  
Student Level: College Graduate  
Topics Covered Extensively: Solar Collector Evaluation/Design

\*Theory of Photovoltaic - Research  
Instructor: Cohen, Morrel  
Student Level: College Graduate  
Topics Covered Extensively: Photovoltaics

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CITY COLL OF CHICAGO- CITY WIDE C. (29050)  
CHICAGO, Illinois 60601  
(312) 977-2500

SOLAR RELATED COURSES

\*Natural Resources: Solar Energy  
Instructor: Tryony, John  
Department: Public Service Institute

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DEPAUL UNIVERSITY (1671)  
CHICAGO, Illinois 60604  
(312) 321-8000

SOLAR RELATED COURSES

Environmental Quality  
Instructor: Schillinger, E. J.  
(312) 321-8175  
Course Number: 390  
Department: Physics  
Credits: 4

1978-79 National Solar Energy Education Directory

Illinois

Student Level: College Graduate  
Duration: 3 Weeks, 25.0 hrs per week  
Contact Hours: 75  
Classroom: 50  
Laboratory: 25  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Elec'l Generation; Central  
Number of Times Taught: 1  
Average Enrollment: 20

Probs.(tech. Soc)-Prac. Sol. Ener-home  
Instructor: R.L.Novak  
(312) 321-8192  
Course Number: NSM303  
Department: DePaul College  
Credits: 4  
Student Level: Junior or Senior  
Duration: 9 Weeks, 3.0 hrs per week  
Contact Hours: 27  
Classroom: 27  
Topics Covered Extensively: Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Home Construction  
Number of Times Taught: 2  
Average Enrollment: 40

EASTERN ILL UNIVERSITY (1674)  
CHARLESTON, Illinois 61920  
(217) 581-3020

SOLAR RELATED COURSES

Alternate Energy Systems  
Instructor: Kleine, Ric  
(217) 581-2721  
Course Number: 3933  
Department: School of Technology  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 30  
Laboratory: 15  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion  
Number of Times Taught: 2  
Average Enrollment: 30

GEORGE WILLIAMS COLLEGE (1683)  
DOWNERS GROVE, Illinois 60515  
(312) 964-3100

SOLAR RELATED COURSES

\*Energy Technology and the Future,  
Instructor: Clark, Edward T.  
Department: IEA

GOVERNORS ST UNIVERSITY (9145)  
PARK FOREST SOUTH, Illinois 60466  
(312) 534-5000

SOLAR RELATED COURSES

Applications of Appropriate Tech.  
Instructor: Hagens, Beth  
Course Number: 5295  
Department: Environmental and Applied Sciences  
Credits: 4  
Student Level: Junior or Senior  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Intro. to Solar Energy; Marketing/Market Analysis; Materials Research; Passive Solar Technology; Solar Energy Policy Development; Solar Economics; Solar Home Construction; Solar Law/Legislation; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Space Heating; Space Cooling; Wind Power; Small Systems  
Number of Times Taught: 2  
Average Enrollment: 15

Fundamentals of Appropriate Technology  
Instructor: Hagens, Beth  
(312) 534-5000  
Course Number: 6255  
Department: Environmental & Applied Sciences  
Credits: 4  
Student Level: Junior or Senior  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Solar Energy Policy Development; Solar Economics; Solar Home Construction; Solar Systems Design; Elec'l Generation, Small Scale; Wind Power, Central Systems; Wind Power, Small Systems  
Number of Times Taught: 2  
Average Enrollment: 15

GREENVILLE COLLEGE (1684)  
GREENVILLE, Illinois 62246  
(618) 664-1840

SOLAR RELATED COURSES

Solar Energy  
Instructor: Siefken, Hugh  
(618) 664-1840  
Course Number: PHY 270  
Department: Physics  
Credits: 4

**Illinois****Solar Energy Research Institute**

**Student Level:** All levels  
**Duration:** 6 Weeks, 15.0 hrs per week  
**Contact Hours:** 108  
**Classroom:** 45  
**Laboratory:** 63

ILL CHICAGO CIRCLE, U OF  
 CHICAGO, Illinois 60680  
 (312) 996-3000

**SOLAR RELATED COURSES**

**Building Construction Systems**  
**Instructor:** Duchnik, Elliott  
 (312) 996-3335  
**Course Number:** ARCH 313  
**Department:** Architecture  
**Credits:** 6  
**Student Level:** Junior or Senior  
**Duration:** 10 Weeks, 15.0 hrs per week  
**Contact Hours:** 150  
**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer  
**Average Enrollment:** 10

**Solar Energy**  
**Instructor:** Simon, H. A.  
 (312) 996-8530  
**Course Number:** ENRE 391  
**Department:** Energy Engineering  
**Credits:** 4  
**Student Level:** Junior or Senior  
**Duration:** 10 Weeks, 4.0 hrs per week  
**Contact Hours:** 40  
**Topics Covered Extensively:** Heat and Energy Transfer; Solar Collector Evaluation/Design

ILL URBANA CAMPUS, U OF  
 URBANA, Illinois 61801  
 (217) 333-1000

**SOLAR RELATED COURSES**

**Advanced Topics to Heat and Mass Transfer**  
**Instructor:** Alkire, Richard  
 (217) 333-0063  
**Course Number:** 488  
**Department:** Chemical Engineering  
**Credits:** 1  
**Student Level:** College Graduate  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45  
**Topics Covered Extensively:** Heat and Energy Transfer  
**Number of Times Taught:** 5  
**Average Enrollment:** 15

**Architectural Design Studio**  
**Instructor:** Bergeson, Donald  
 (217) 333-2848

**Course Number:** 371  
**Department:** Architecture  
**Credits:** 5  
**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 15.0 hrs per week  
**Contact Hours:** 225  
**Topics Covered Extensively:** Energy Conservation; Intro. to Solar Energy

**Electrochemical Engineering**  
**Instructor:** Alkire, Richard  
 (217) 333-0063  
**Course Number:** 388  
**Department:** Chemical Engineering  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45  
**Topics Covered Extensively:** Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Materials Research  
**Number of Times Taught:** 4

**Energy Alternatives and Societal Values**  
**Instructor:** Bond, Charles E.  
 (217) 367-8995  
**Course Number:** AAE 280  
**Department:** Aeronautical and Astronautical Engineering  
**Credits:** 4  
**Student Level:** All levels  
**Duration:** 15 Weeks, 4.0 hrs per week  
**Contact Hours:** 60  
**Classroom:** 60  
**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Energy Conservation  
**Number of Times Taught:** 7  
**Average Enrollment:** 20

**Energy Implications for Building Design**  
**Instructor:** Smith, Robert  
 (217) 333-2848  
**Course Number:** 301E3  
**Department:** Architecture  
**Credits:** 4  
**Student Level:** College Graduate  
**Duration:** 15 Weeks, 4.0 hrs per week  
**Contact Hours:** 60  
**Classroom:** 60  
**Topics Covered Extensively:** Appropriate Technology; Energy Conservation  
**Number of Times Taught:** 1  
**Average Enrollment:** 10

**Geology of Energy**  
**Instructor:** Tarigenheim, R. L.  
 (217) 333-1338  
**Course Number:** 105  
**Department:** Geology  
**Credits:** 3  
**Student Level:** Freshman or Sophomore  
**Duration:** 15 Weeks, 2.0 hrs per week  
**Contact Hours:** 30  
**Classroom:** 30  
**Number of Times Taught:** 4  
**Average Enrollment:** 15

**Heat Transfer**

Instructor: Dunn, W. E.  
 Course Number: ME 213  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Energy Conservation; Energy Conversion; Heat and Energy Transfer; Solar Collector Evaluation/Design

**Oceanography**

Instructor: Anderson, T. F.  
 Course Number: GEO 1370  
 Department: Geology  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 45  
 Laboratory: 15  
 Number of Times Taught: 7  
 Average Enrollment: 10

**Solar Energy Utilization**

Instructor: Clausing, A. M.  
 Course Number: ME 307  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 3  
 Average Enrollment: 30

**Solar Thermal Systems and Architectural Design**

Instructor: Bergeson, Donald  
 Course Number: 301S  
 Department: Architecture  
 Credits: 4  
 Student Level: College Graduate  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 60  
 Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating

Number of Times Taught: 1  
 Average Enrollment: 10

**Sun, Wind, Earth, and Sea**

Instructor: Bend, Charles E.  
 Course Number: AAE 281  
 Department: Aeronautical and Astronautical Engineering  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Intro. to Solar Energy; Solar Energy Policy Development; Solar Economics; Domestic Hot Water; Space Heating; Wind Power, Central Systems  
 Number of Times Taught: 2  
 Average Enrollment: 24

**ILLINOIS INST TECHNOLOGY**

CHICAGO, Illinois 60616  
 (312) 567-3189

(1691)

**PROGRAMS AND CURRICULA**

**Energy Conscious Design**  
 Degree: Architecture  
 Contact: Sharpe, David C.  
 (312) 567-3262

Students Taking or Completing Offering:  
 Architect, Educator, Researcher, Other

**SOLAR RELATED COURSES****Energy Conscious Design I**

Instructor: Swanson, Alfred  
 Course Number: ARCH 387  
 Department: Architecture, Planning and Design

Program or Curriculum: Energy Conscious Design  
 Credits: 2  
 Student Level: Junior or Senior  
 Duration: 17 Weeks, 2.0 hrs per week  
 Contact Hours: 34  
 Topics Covered Extensively: Energy Conservation; Passive Solar Technology; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Wind Power, Small Systems  
 Number of Times Taught: 2  
 Average Enrollment: 10

**Housing and Community Bldgs.**

Course Number: CRP 201  
 Department: City and Regional Planning

Program or Curriculum: Energy Conscious Design  
 Credits: 6  
 Student Level: All levels  
 Duration: 17 Weeks, 16.0 hrs per week  
 Contact Hours: 272

Illinois

Solar Energy Research Institute

**Topics Covered Extensively: Passive**

Solar Technology; Solar System Components; Solar Home Construction

**Solar & Geographical Energy**

Instructor: Lavan, Zalman  
Course Number: 449  
Department: Mechanical and Aero. Engr.  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45

**Topics Covered Extensively: Energy**

Storage; Heat and Energy Transfer; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling

Number of Times Taught: 4

Average Enrollment: 20

ILLINOIS STATE UNIVERSITY  
NORMAL, Illinois 61761  
(309) 438-2111.

**PROGRAMS AND CURRICULA**

**Technology for Industry-Energy**

Degree: BS, Industrial Technology  
Contact: Israel, Everett N.  
(309) 438-3661

Students Taking or Completing Offering:  
Contractor, Other

**SOLAR RELATED COURSES**

**Solar Cooling and Heating**

Instructor: Frances, Edward  
(309) 438-3661  
Course Number: 300 LEVEL  
Department: Industrial Technology  
Program or Curriculum: Technology for Industry-Energy  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 5.0 hrs per week  
Contact Hours: 75  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar System's Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Space Heating; Space Cooling  
Number of Times Taught: 2  
Average Enrollment: 14

**Solar Workshop**

Instructor: Frances, Edward  
(309) 438-3661

**Course Number: 300 LEVEL**

Department: Industrial Technology  
Program or Curriculum: Technology for Industry-Energy  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 5.0 hrs per week  
Contact Hours: 75  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Space Heating; Space Cooling  
Number of Times Taught: 2  
Average Enrollment: 14

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LEWIS UNIVERSITY (1707)  
LOCKPORT, Illinois 60441  
(815) 838-0500

**SOLAR RELATED COURSES**

**Alt.Ener. Sour.-Prob., Phys: Environ.**  
Instructor: Walch, Philip  
Department: Physics  
Topics Covered Extensively: Alternate Energy Sources

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NORTHERN ILL UNIVERSITY (1737)  
DE KALB, Illinois 60115  
(815) 753-1000

**SOLAR RELATED COURSES**

**Energy Conversion**  
Instructor: Shaffer, John C.  
(815) 753-1773  
Course Number: PHYS 436  
Department: Physics  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Energy Conversion

**Solar Energy Collection and Conversion**  
Instructor: Shaffer, John C.  
(815) 753-1773

\* Course Number: PHYS 432  
\* Department: Physics  
\* Credits: 3  
\* Student Level: Junior or Senior  
\* Duration: 15 Weeks, 3.0 hrs per week  
\* Contact Hours: 45  
\* Classroom: 45  
Topics Covered Extensively: Energy

## 1978-79 National Solar Energy Education Directory

Illinois

## Conversion; Photovoltaics; Elec'l Generation, Small Scale

## Solar Energy Seminar

Instructor: Corer, John C.  
 Course Number: IT598U  
 Department: Industry and Technology  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 4 Weeks, 20.0 hrs per week  
 Contact Hours: 80  
 Classroom: 40  
 Laboratory: 10  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction; Solar Systems Design; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 10

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 NORTHWESTERN UNIVERSITY  
 EVANSTON, Illinois 60201  
 (312) 492-3741

## PROGRAMS AND CURRICULA

## Solar Energy Principles and Applications

Degree: NO. Departmental Engineering  
 Degree  
 Contact: Thodos, George

## SOLAR RELATED COURSES

Solar Energy Principles and Applications  
 Instructor: Thodos, George  
 Course Number: 710-C85  
 Department: Chemical Engineering  
 Program or Curriculum: Solar Energy Principles and Applications  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 4.0 hrs per week  
 Contact Hours: 40  
 Topics Covered Extensively: Intro. to Solar Energy; Solar System Components  
 Number of Times Taught: 2  
 Average Enrollment: 18

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PRINCIPIA COLLEGE  
 ELSA, Illinois 62028  
 (618) 374-2131

## SOLAR RELATED COURSES

Energy Efficient Living  
 Instructor: Holzberlein, Thomas M.  
 Course Number: 172  
 Department: Physics  
 Credits: 5

Student Level: All levels  
 Duration: 10 Weeks, 10.0 hrs per week  
 Contact Hours: 100  
 Classroom: 80  
 Laboratory: 20  
 Topics Covered Extensively: Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction  
 Number of Times Taught: 1  
 Average Enrollment: 23

## Environmental Physics

Instructor: Holzberlein, Thomas  
 Course Number: (618) 374-2131  
 Department: Physics  
 Credits: 5  
 Student Level: All levels  
 Duration: 10 Weeks, 5.0 hrs per week  
 Contact Hours: 52  
 Classroom: 52  
 Topics Covered Extensively: Alternate Energy Sources; Intro. to Solar Energy; Passive Solar Technology; Space Heating  
 Number of Times Taught: 3  
 Average Enrollment: 20

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 SANGAMON STATE UNIVERSITY  
 SPRINGFIELD, Illinois 62708  
 (217) 786-6634

(9333)

## SOLAR RELATED COURSES

Solar Energy-Options for Illinois  
 Instructor: Casella, Al  
 Course Number: (217) 786-6630  
 Department: PAC  
 Credits: Physical Sciences  
 Student Level: 2  
 Duration: Junior or Senior  
 Contact Hours: 4 Weeks, 8.0 hrs per week  
 Classroom: 32  
 Topics Covered Extensively: Intro. to Solar Energy  
 Number of Times Taught: 3  
 Average Enrollment: 100

## Solar Energy-Principles and App.

Instructor: Casella, Al  
 Course Number: (217) 786-6630  
 Department: PHS-422  
 Credits: Physical Sciences  
 Student Level: 5  
 Duration: Junior or Senior  
 Contact Hours: 16 Weeks, 8.0 hrs per week  
 Classroom: 128  
 Laboratory: 64  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Space

Illinois

Solar Energy Research Institute

Heating; Space Cooling

Number of Times Taught: 3  
Average Enrollment: 40

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SOUTHERN ILLINOIS U CARBONDALE  
CARBONDALE, Illinois 62901  
(618) 453-2121

(1758)

SOLAR RELATED COURSES

*Solar Heating Design*

Instructor: Kent, Albert  
(618) 536-2396  
Course Number: TEE407  
Department: Engin. and Tech.-Therm  
and Envir., Eng.  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Solar System  
Components; Solar Economics; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Solar Systems Testing  
and Evaluation; Domestic Hot Water;  
Elec'l Generation, Central; Elec'l  
Generation, Small Scale; Process Heat;  
Industrial; Space Heating; Space  
Cooling  
Number of Times Taught: 1  
Average Enrollment: 20

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SOUTHERN ILLINOIS U EDWARDSVL  
EDWARDSVILLE, Illinois 62026  
(618) 692-2000

(1759)

SOLAR RELATED COURSES

*Solar Energy*

Instructor: Kokoreopoulos, P.  
(618) 692-2500  
Department: Engineering Technology  
Student Level: All levels  
Duration: 5 Weeks, 3.0 hrs per week  
Contact Hours: 15  
Classroom: 10  
Topics Covered Extensively: Energy  
Conservation; Energy Storage; Intro. to  
Solar Energy; Solar System Components;  
Solar Systems Design; Solar Systems  
Installation; Domestic Hot Water; Space  
Heating  
Number of Times Taught: 6  
Average Enrollment: 40

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Community/Junior Colleges

CARL SANDBURG COLLEGE

GALESBURG, Illinois 61401  
(309) 344-2510

(17265)

PROGRAMS AND CURRICULA

*Adult Continuing Edu.*  
Contact: Rudd, Lenny

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CITY C CHICAGO LOOP C  
CHICAGO, Illinois 60601  
(312) 269-8000

(1652)

SOLAR RELATED COURSES

*Basic Consumer Ed. Courses - Sol. Products*

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DUPAGE, COLLEGE OF  
GLEN ELLYN, Illinois 60137  
(312) 858-2800

(16656)

SOLAR RELATED COURSES

*Introduction to Solar Energy*  
Department: Extension Division  
Student Level: All levels  
Duration: 3 Weeks, 20.0 hrs per week  
Contact Hours: 60  
Classroom: 39  
Laboratory: 21  
Topics Covered Extensively: Intro. to  
Solar Energy  
Number of Times Taught: 3  
Average Enrollment: 25

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ILL ESTH CC OLNEY CEN C  
OLNEY, Illinois 62450  
(618) 395-4351

(1742)

PROGRAMS AND CURRICULA

*Construction Energy Program*  
Degree: AD; Applied Science  
Contact: Harris, Steve  
(618) 395-4351  
Students Taking or Completing Offering:  
Installer-Residential (Solar System),  
Solar Technician

SOLAR RELATED COURSES

*Energy Conservation Theory*

Instructor: Culver, Ray  
(618) 395-4351  
Course Number: SCI 121  
Department: Physics  
Program or Curriculum: Construction Energy  
Program  
Credits: 3  
Student Level: Freshman or Sophomore

100

1978-79 National Solar Energy Education

Illinois

Duration: 12 Weeks, 3.0 hrs.

Contact Hours: 36

Classroom: 36

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversions; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Systems Design

Energy Systems in Construction

Instructor: Parish, William  
(618) 395-4351

Course Number: EQJ 172

Department: Construction Trades

Program or:

Curriculum: Construction Energy Program

Credits: 3

Student Level: Freshman or Sophomore

Duration: 12 Weeks, 3.0 hrs per week

Contact Hours: 36

Classroom: 36

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversions; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Wind Power, Central Systems; Wind Power, Small Systems

Number of Times Taught: 1

Average Enrollment: 30

Gas and Arc Welding

Instructor: Jausel, Russ  
(618) 395-4351

Course Number: AUM 282

Department: Welding

Program or:

Curriculum: Construction Energy Program

Credits: 5

Student Level: All levels

Duration: 12 Weeks, 3.0 hrs per week

Contact Hours: 96

Classroom: 24

Laboratory: 72

Number of Times Taught: 3

Average Enrollment: 12

Department: Air Conditioning and Refrigeration

Credits:

Student Level: Freshman or Sophomore

Duration: 6 Weeks, 12.0 hrs per week

Contact Hours: 72

Classroom: 48

Laboratory: 24

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Process Heat, Agricultural; Process Heat, Industrial; Space Heating

Number of Times Taught: 3

Average Enrollment: 20

ILLINOIS CENTRAL COLLEGE

(6753)

EAST PEORIA, Illinois 61635

(309) 694-5011

SOLAR RELATED COURSES

Energy Alternatives

Instructor: Brooks-Milner, D.L.

Course Number: ARC 183-3

Department: Agriculture-Indus.

Occupation:

Credits: 3

Student Level: College Graduate

Duration: 16 Weeks, 3.0 hrs per week

Contact Hours: 48

Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Wind Power, Central Systems; Wind Power, Small Systems

Number of Times Taught: 6

Average Enrollment: 20

ILL-EST LINCOLN TRAIL C. (9786)

ROBINSON, Illinois 62454

(618) 544-8557

SOLAR RELATED COURSES

Air Conditioning and Refrigeration-Load Calculation

Instructor: Harvey, Robert

(618) 544-8657

Course Number: ACR 272

Illinois

Solar Energy Research Institute

**Residential Solar Energy Planning**

Instructor: Brooks-Miller, D.L.  
Course Number: ARCO01-3  
Department: Agriculture-Indus.  
Occupation:  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction; Domestic Hot Water; Space Heating; Space Cooling; Wind Power, Central Systems; Wind Power, Small Systems

JOHN A LOGAN COLLEGE  
CARTERVILLE, Illinois 62918  
(618) 985-3741

(8076)

**SOLAR RELATED COURSES**

*Introduction to Solar Energy*  
Instructor: Enrich, Brent  
(618) 684-4110  
Course Number: DRV 035A  
Department: Adult and Continuing Education  
Student Level: All levels  
Duration: 10 Weeks, 2.0 hrs per week  
Contact Hours: 20  
Classroom: 14  
Laboratory: 6  
Topics Covered Extensively: Alternate Energy Sources; Intro. to Solar Energy  
Number of Times Taught: 2  
Average Enrollment: 18

**KANKAKEE CHTY COLLEGE**

KANKAKEE, Illinois 60901  
(815) 933-9511

**SOLAR RELATED COURSES**

*Solar Energy Survey*  
Instructor: Mathers, Kris  
(815) 933-0345  
Course Number: REFR 1413  
Department: Technical Division  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Intro. to Solar Energy; Solar Economics; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation  
Number of Times Taught: 1  
Average Enrollment: 8

MCKENRY COUNTY COLLEGE  
CRYSTAL LAKE, Illinois 60014  
(815) 455-3700

**SOLAR RELATED COURSES**

*Solar Energy Fundamentals*  
Instructor: Konitzer, John D.  
(815) 455-3700  
Course Number: CCO 009A  
Department: Natural Science  
Student Level: All levels  
Duration: 4 Weeks, 4.0 hrs per week  
Contact Hours: 16  
Classroom: 12  
Laboratory: 4  
Topics Covered Extensively: Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Elec'l Generation, Central; Elec'l Generation, Small Scale; Space Heating; Wind Power, Central Systems; Wind Power, Small Systems  
Number of Times Taught: 6  
Average Enrollment: 6

MORaine WLY HTY COLLEGE  
PALOS HILLS, Illinois 60465  
(312) 974-4300

**SOLAR RELATED COURSES**

\**Alternate Energy Conference*  
Instructor: Zoller, Arlene  
Department: Special Projects  
Topics Covered Extensively: Alternate

**Energy Sources****Introduction to Solar Energy**

Instructor: Zoller, Arlene  
 Department: Special Projects  
 Topics Covered Extensively: Intro. to Solar Energy

**Lecture Series on Solar Homes**

Instructor: Zoller, Arlene  
 Department: Special Projects  
 Topics Covered Extensively: Passive Solar Technology; Solar Home Construction

**Solar Power and Collector Equipment**

Instructor: Böhles, William J.  
 Topics Covered Extensively: Solar System Components; Solar Collection Evaluation; Design; Solar Systems Design

**TRITON COLLEGE**

(1773)

RIVER GROVE, Illinois 60171  
 (312) 456-0300**SOLAR RELATED COURSES****Solar Energy (Introduction To)**

Instructor: Fricano, Peter  
 Course Number: TEC E19  
 Department: School of Continuing Ed.  
 Student Level: All levels  
 Duration: 10 Weeks, 2.0 hrs per week  
 Contact Hours: 20  
 Number of Times Taught: 3  
 Average Enrollment: 20

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**WM RAINIER HARPER COLLEGE**PALATINE, Illinois 60067  
 (312) 397-5000

(3961)

**SOLAR RELATED COURSES****Solar Energy Architecture**

Instructor: Yohannan, Joseph  
 (312) 397-3000,  
 Course Number: ATE211  
 Department: Architectural Technology  
 Credits: 3  
 Student Level: All levels  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Topics Covered Extensively: Energy Conservation; Energy Storage; Intro. to Solar Energy; Passive Solar Technology  
 Number of Times Taught: 2  
 Average Enrollment: 20

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**Vocational/Technical Colleges****THE QUINCY TECHNICAL SCHOOL**(90030)  
 Quincy, Illinois 62301**SOLAR RELATED COURSES****Air Cond., Refrig., Heating Service**

Instructor: Devlin, David B./  
 W.G.Dubuque  
 (217) 224-0600  
 Department: Refrigeration  
 Student Level: High School Graduate  
 Duration: 1 Weeks, 30.0 hrs per week  
 Contact Hours: 30  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Storage; Solar System Components; Solar Systems Design; Space Heating; Space Cooling  
 Number of Times Taught: 1  
 Average Enrollment: 20

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**Other Educational Institutions****SOLAR STORE INC**Box 841, Dept. bs  
 Peoria, Illinois 61652

(90330)

**PROGRAMS AND CURRICULA**

\*Sol. Energ. Ed. for Installers  
 Contact: Shanks, Diane/ Adsit, Mg

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## Colleges/Universities

**BALL STATE UNIVERSITY** (1786)  
MUNCIE, Indiana 47306  
(317) 289-1241

## SOLAR RELATED COURSES

*Solar Architecture for Architects*

Instructor: Koester, Robert J.  
(317) 285-4955  
Course Number: 498  
Department: Arch.  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating.  
Number of Times Taught: 4  
Average Enrollment: 15

Laboratory: 20

Topics Covered Extensively: Energy Conversion; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar Home Construction; Solar Collector Evaluation/Design; Domestic Hot Water; Elec'l Generation; Central; Space Heating

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**IND NORTHERN GRAD SCH MGMT** (1806)  
MARION, Indiana 46952  
(317) 674-2900

## PROGRAMS AND CURRICULA

*Masters of Professional Management*

Degree: MS, OT, Professional Management  
Contact: Morgan, James/ Costa, Dr. Da  
(317) 674-2900

## SOLAR RELATED COURSES

*Energy Auditing for Mgrs. and Engrs.*

Instructor: Klima, Karel/ Thumann, Al  
(404) 874-8188

Course Number: 561  
Department: Ft. Wayne Ext.-Prof. Mgmt. Hosp./Adm.

Program or Curriculum: Masters of Professional Management

Credits: 4  
Student Level: College Graduate  
Duration: 13 Weeks, 2.0 hrs per week  
Contact Hours: 26  
Classroom: 26

Topics Covered Extensively: Energy Conservation; Solar Systems Testing and Evaluation; Process Heat, Industrial; Space Heating; Space Cooling  
Average Enrollment: 50

*Energy Conservation for Managers*

Instructor: Klima, Karel/ Thumann, Al  
(404) 874-8188

Course Number: 560  
Department: Ft. Wayne Ext.-Prof. Mgmt./Hosp. Adm.

Program or Curriculum: Masters of Professional Management

Credits: 4  
Student Level: College Graduate  
Duration: 13 Weeks, 2.0 hrs per week  
Contact Hours: 26  
Classroom: 26

Topics Covered Extensively: Energy Conservation; Process Heat, Industrial; Space Heating; Space Cooling  
Average Enrollment: 50

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**BALTIMORE COLLEGE** (1793)  
RICHMOND, Indiana 47374  
(317) 962-6561

## SOLAR RELATED COURSES

*Energy, Technology, And Human Affairs*  
Instructor: Flick, Cathy  
(317) 962-6561  
Course Number: P10  
Department: Physics  
Credits: 3  
Student Level: All levels  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40  
Number of Times Taught: 45  
Average Enrollment: 35

**HUNTINGTON COLLEGE** (1803)  
HUNTINGTON, Indiana 46750  
(219) 356-6000

## SOLAR RELATED COURSES

*Energy Alternatives: Solar Energy*  
Instructor: Smith, Gerald D.  
(219) 356-6000  
Course Number: 207  
Department: Physics  
Credits: 4  
Student Level: All levels  
Duration: 4 Weeks, 15.0 hrs per week  
Contact Hours: 60  
Classroom: 40

IND- PURDUE U FORT WAYNE (1812)  
FORT WAYNE, Indiana 46805  
(219) 482-5121

## SOLAR RELATED COURSES

*Solar Energy, Ready When You Are*  
Instructor: Johnson, Kenneth R.  
(219) 482-5737  
Department: Engineering/Continuing  
Education  
Student Level: All levels  
Duration: 10 Weeks, 2.0 hrs per week  
Contact Hours: 20  
Classroom: 20  
Topics Covered Extensively: Intro. to  
Solar Energy; Solar System Components;  
Solar Systems Design; Space Heating

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IND- PURDUE U INDIANAPOLIS (1813)  
INDIANAPOLIS, Indiana 46202  
(317) 635-8661

## SOLAR RELATED COURSES

*Solar Energy For Heating and Cooling*  
Instructor: Kaplan, Jerome I.  
(317) 923-1321  
Course Number: ME497  
Department: Engineering and  
Technology  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45

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NOTRE DAME, UNIVERSITY OF (1840)  
NOTRE DAME, Indiana 46556  
(219) 283-1122

## SOLAR RELATED COURSES

*Man and Energy - Alt. to Atom and Coal*  
Instructor: Berry, William B.  
(219) 283-1122  
Course Number: EE-213  
Department: Electrical Engineering  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Alternate  
Energy Sources; Intro. to Solar Energy  
Number of Times Taught: 6  
Average Enrollment: 12

*Solid-State Energy Conversion*  
Instructor: Berry, William B.  
(219) 283-1122  
Course Number: EE-466  
Department: Electrical Engineering  
Credits: 3  
Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45

Topics Covered Extensively: Intro. to  
Solar Energy; Photovoltaics  
Number of Times Taught: 8  
Average Enrollment: 12

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PURDUE U MAIN CAMPUS (1825)  
LAFAYETTE, Indiana 47907  
(317) 749-8111

## SOLAR RELATED COURSES

*Aerodynamics of Wind Machines*  
Instructor: Sullivan, Jo  
(317) 749-2400  
Course Number: 590A  
Department: Aero & Astro  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 30  
Laboratory: 15  
Topics Covered Extensively: Energy  
Conversion; Wind Power, Central  
Systems; Wind Power, Small Systems  
Number of Times Taught: 2  
Average Enrollment: 10

*Properties of Solids*

Instructor: Sato, H.  
Course Number: MSE 550  
Department: Materials Engr  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Materials  
Research  
Number of Times Taught: 8  
Average Enrollment: 10

*Sel. of Materials and Mech. Functions*

Instructor: Hruska, S. J.  
(317) 493-1875  
Course Number: MSE 345  
Department: Materials Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 30  
Laboratory: 30  
Topics Covered Extensively: Materials  
Research  
Number of Times Taught: 10  
Average Enrollment: 140

*Solar Energy Utilization*

Instructor: Viskanta, R.  
Course Number: ME495V  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 5 Weeks, 3.0 hrs per week

Contact Hours: 15

Topics Covered Extensively: Appropriate

Technology; Biomass Conversion; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Space Heating; Space Cooling.

Number of Times Taught: 2

Average Enrollment: 20

Utilization of Renewable Resources

Instructor: Ladisch, Michael  
(317) 749-2971

Course Number: AGR. 500  
Department: Agricultural Engineering Dept.

Credits: 1  
Student Level: Junior or Senior

Duration: 16 Weeks, 1.0 hrs per week  
Contact Hours: 16

Classroom: 16  
Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conversion.

Average Enrollment: 40

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**Vocational/Technical Colleges**

**IND VOC TECH C- EVANSVILLE**  
EVANSVILLE, Indiana 47710  
(812) 426-2865

(9925)

**SOLAR RELATED COURSES**

**Solar Heating and Cooling**  
Instructor: Foster, Jerry  
(812) 426-2865

Course Number: 7157  
Department: Heating, Air Conditioning and Refrigeration

Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 11 Weeks, 3.0 hrs per week  
Contact Hours: 33  
Classroom: 11  
Laboratory: 22  
Number of Times Taught: 1  
Average Enrollment: 15

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**ROSE-HULMAN INST OF TECHN** (1830)  
TERRE HAUTE, Indiana 47803  
(812) 877-1511

**SOLAR RELATED COURSES***Independent study*

Instructor: Caskey, Jerry A.  
(812) 877-1511  
Course Number: CHE490  
Department: Chem. Engineering  
Mech. Engineering

Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40

Classroom: 20  
Topics Covered Extensively: Energy Storage; Intro. to Solar Energy; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Space Heating  
Number of Times Taught: 3  
Average Enrollment: 11

*Solar Energy*

Instructor: Dekker, Don L.  
(812) 877-1511  
Course Number: ME308  
Department: Mechanical Engineering  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40

Classroom: 40  
Topics Covered Extensively: Intro. to Solar Energy; Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 1

**IND VOC TECH- SELLERSBURG**  
SELLERSBURG, Indiana 47172  
(812) 246-3301

(10109)

**SOLAR RELATED COURSES***Solar Heating & Cooling*

Instructor: Onsly, Deart  
Course Number: 7157  
Department: Heating, Air, Conditioning, Refrigeration

Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 11 Weeks, 4.0 hrs per week  
Contact Hours: 44  
Classroom: 22  
Laboratory: 22

Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating

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**INDIANA VOCATIONAL TECHNICAL COLLEGE-**

NH  
Gary, Indiana 46409  
(219) 981-1111

(90040)

**SOLAR RELATED COURSES****Solar Energy Seminar**

Credits: 1

Student Level: All levels

Duration: 1 Weeks, 1.5 hrs per week

Contact Hours: 11

Topics Covered Extensively: Solar Energy

Policy Development; Solar System

Components; Solar Law/Legislation;

Solar Collector Evaluation/Design;

Solar Systems Design.

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**Other Educational Institutions****INDIANAPOLIS CENTER FOR ADVANCED  
RESEARCH**1219 West Michigan St.  
Indianapolis, Indiana 46202

(90300)

**SOLAR RELATED COURSES****\*Solar Energy Studies**

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Iowa

Solar Energy Research Institute

Colleges/Universities

DIVINE WORD COLLEGE (1858)  
EPWORTH, Iowa 52045  
(319) 876-3354

SOLAR RELATED COURSES

*Energy (lecture and laboratory)*

Instructor: Tomuta, Liviū  
(319)-876-3354  
Course Number: PHYS. 321/2  
Department: Science and Mathematics  
Credits: 4

Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 75  
Classroom: 45  
Laboratory: 30

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Conversion;  
Energy Storage; Heat and Energy  
Transfer; Intro. to Solar Energy;  
Photovoltaics; Solar Systems Design;  
Space Heating

*Everybody's Physics*

Instructor: Tomuta, Liviū  
(319) 876-3354  
Course Number: PHYS 158

Department: Science and Mathematics  
Credits: 3

Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45  
Classroom: 23  
Laboratory: 22

Topics Covered Extensively: Alternate  
Energy Sources; Energy Conservation;  
Energy Conversion; Intro. to Solar  
Energy

IOWA STATE U SCI & TECHN (1869)  
AMES, Iowa 50010  
(515) 294-4111

PROGRAMS AND CURRICULA

*Arch.-Energy Conscious Design*

Degree: M.Arch.  
Contact: Greenfield, Sanford R.  
(515) 294-4718

Students Taking or Completing Offerings:  
Architect, Educator, Researcher,  
Do-it-yourself Homeowner

SOLAR RELATED COURSES

*Adv. Thermal Environmental Engineering*

Instructor: Woods, James E.  
(515) 294-2342  
Course Number: ME647X  
Department: Mech. Engr.  
Program or Curriculum: Arch.-Energy Conscious  
Design

Credits:

Student Level: College Graduate  
Duration: 11 Weeks, 3.0 hrs per week

Contact Hours: 88

Classroom: 22

Laboratory: 66

Topics Covered Extensively: Alternate  
Energy Sources; Energy Conservation;  
Energy Conversion; Energy Storage; Heat  
and Energy Transfer; Passive Solar  
Technology; Domestic Hot Water; Space  
Heating; Space Cooling

Number of Times Taught: 1

Average Enrollment: 5

*Design with Solar Energy*

Instructor: Kainlauri, Eino O.  
(515) 294-4717

Department: Architecture -  
Extension

Program or Curriculum: Arch.-Energy Conscious  
Design

Student Level: College Graduate  
Duration: 1 Weeks, 28.0 hrs per week

Contact Hours: 28

Classroom: 12

Laboratory: 16

Topics Covered Extensively: Appropriate  
Technology; Energy Storage; Heat and  
Energy Transfer; Passive Solar  
Technology; Solar System Components;  
Solar Home Construction; Solar Systems  
Design; Domestic Hot Water; Space  
Heating; Space Cooling

*Human Thermal Environments*

Instructor: Woods, James E.  
(515) 294-2342

Course Number: 529

Department: Design/Architecture

Program or Curriculum: Arch.-Energy Conscious  
Design

Credits: 3

Student Level: College Graduate  
Duration: 11 Weeks, 3.0 hrs per week

Contact Hours: 33

Classroom: 33

Topics Covered Extensively: Heat and  
Energy Transfer; Space Heating; Space  
Cooling

Number of Times Taught: 2

Average Enrollment: 8

*Solar Energy Thermal Systems*

Instructor: Woods, James E.  
(515) 294-2342

Course Number: ME528

Department: Mechanical Engineering

Program or Curriculum: Arch.-Energy Conscious  
Design

Credits: 3

Student Level: Junior or Senior  
Duration: 11 Weeks, 3.0 hrs per week

Contact Hours: 33

Classroom: 33

Topics Covered Extensively: Appropriate  
Technology; Energy Conservation; Energy

## 1978-79 National Solar Energy Education Directory

Iowa

Conversion; Energy Storage; Heat and Energy Transfer; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
Number of Times Taught: 3  
Average Enrollment: 24

IOWA, UNIVERSITY OF (1892)  
IOWA CITY, IOWA 52242  
(319) 353-2121

### SOLAR RELATED COURSES

*Chemistry and the Physics of the Environment*  
Instructor: Frank, L. A./ Frank, C. W.  
Course Number: 1125/29/25  
Department: Liberal Arts/Chemistry-Physics  
Credits: 4  
Student Level: All levels  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 60  
Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Energy Storage; Intro. to Solar Energy  
Number of Times Taught: 6  
Average Enrollment: 350

*Methods of Direct Energy Conversion*  
Instructor: Lonngren, Karl  
(319) 353-3696  
Course Number: 545:176  
Department: Electrical and Computer Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Photovoltaics  
Number of Times Taught: 7  
Average Enrollment: 10

*Solar Energy Applications*  
Instructor: Spencer, D. L.  
(319) 353-4099  
Course Number: 528:148  
Department: Energy Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.5 hrs per week  
Contact Hours: 54  
Classroom: 44  
Laboratory: 10  
Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design  
Number of Times Taught: 2

Average Enrollment: 18

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LOTAS COLLEGE (1873)  
DUBUQUE, IOWA 52001  
(319) 588-7100

### SOLAR RELATED COURSES

*Physics: Energy and the Environment*  
Instructor: Hutchinson, D. J.  
(319) 583-7154  
Course Number: 9  
Department: Physics and Engineering Science  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Intro. to Solar Energy; Solar Energy Policy Development  
Number of Times Taught: 4  
Average Enrollment: 75

\*\*\*\*\*  
LUTHER COLLEGE (1874)  
DECORAH, IOWA 52101  
(319) 387-2000

### SOLAR RELATED COURSES

*Solar Energy*  
Instructor: Nelson, David T.  
(319) 387-1226  
Department: Physics  
Credits: 3  
Student Level: All levels  
Duration: 3 Weeks, 20.0 hrs per week  
Contact Hours: 60  
Classroom: 30  
Laboratory: 30  
Topics Covered Extensively: Intro. to Solar Energy; Space Heating  
Number of Times Taught: 4  
Average Enrollment: 30

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NORTHERN IOWA, U OF (1890)  
CEDAR FALLS, IOWA 50613  
(319) 273-2311

### SOLAR RELATED COURSES

*Alternate Energy Sources*  
Instructor: Macomber, Hilliard K.  
(319) 273-2290  
Department: College of Natural Sciences  
Credits: 1  
Student Level: College Graduate  
Duration: 5 Weeks, 3.0 hrs per week  
Contact Hours: 15

Classrooms: 12

Topics Covered Extensively: Alternate Energy Sources

**Physics & the Environment**Instructor: Jensen, Verner  
(319) 273-2508

Course Number: 88:010

Department: Physics Dept. of Natural Science

Credits: 3

Student Level: Freshman or Sophomore

Duration: 16 Weeks, 3.0 hrs per week

Contact Hours: 48

Number of Times Taught: 10

Average Enrollment: 80

**Power Systems**Instructor: Norton, Will  
(319) 273-2561

Course Number: 33:032

Department: Natural Sciences

Credits: Industrial Technology

Student Level: Freshman or Sophomore

Duration: 18 Weeks, 2.0 hrs per week

Contact Hours: 36

Classroom: 35

Number of Times Taught: 9

Average Enrollment: 94

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**Community/Junior Colleges****DES MOINES AREA CC**  
ANKENY, Iowa 50021

(515) 964-6200

(8735)

**PROGRAMS AND CURRICULA****Solar Energy I and II**

Degree: Adult Ed.

Contact: Rowe, Gordon N.

(515) 964-6266

**SOLAR RELATED COURSES****Man and Energy**Instructor: Trumpp, Frank  
(515) 964-6292

Course Number: PHYS 110

Department: Math/Science

Credits: 3

Student Level: Freshman or Sophomore

Duration: 12 Weeks, 3.0 hrs per week

Contact Hours: 36

Classroom: 35

Topics Covered Extensively: Alternate Energy Sources

Number of Times Taught: 9

Average Enrollment: 19

**Solar Energy I - General Overview**Instructor: Sidles, Paul  
(515) 296-6844

Course Number: BLDG: 519

Department: Adult Ed.

Program or Curriculum: Solar Energy I and II

Student Level: All levels

Duration: 10 Weeks, 3.0 hrs per week

Contact Hours: 30

Classroom: 27

Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy;

Solar System Components; Solar Economics; Solar Collector

Evaluation/Design; Solar Systems Design; Domestic Hot Water

Number of Times Taught: 7

Average Enrollment: 15

**Solar Energy II - Air Systems**

Instructor: Hummell, Myron

(515) 239-6900

Course Number: BLDG: 522

Department: Adult Ed.

Program or Curriculum: Solar Energy I and II

Student Level: All levels

Duration: 10 Weeks, 3.0 hrs per week

Contact Hours: 30

Classroom: 27

Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer;

Sheet Metal Techniques; Solar System Components; Solar Collector

Evaluation/Design; Solar Systems Design; Solar Systems Installation;

Solar Systems Maintenance; Space Heating

Number of Times Taught: 2

Average Enrollment: 10

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**KIRKWOOD CMTY COLLEGE**

CEDAR RAPIDS, Iowa 52406

(319) 399-5411

(4076)

**SOLAR RELATED COURSES****\*Agr. Supplemental Ener. Systems**

Department: Agr. Cont. Education

Topics Covered Extensively: Biomass Conversion; Wind Power, Small Systems

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MUSCATINE CITY COLLEGE  
MUSCATINE, Iowa 52761  
(319) 263-8250

## PROGRAMS AND CURRICULA

*Solar Carpentry*

Degree: BS, Industrial Education  
Contact: Melander, Harry  
(319) 263-8250

Students Taking or Completing Offering:  
Installer-Residential (Solar System)

*Use of Sol. Ener.-Homeowners, Builders*

Degree: Certificate of Completion  
Contact: Ohlendorf, Vernon  
(319) 263-8250

Students Taking or Completing Offering:  
Do-it-yourself Homeowner

## SOLAR RELATED COURSES

*Solar Carpentry*

Instructor: Melander, Harry  
(319) 263-8250

Department: Trades

Program or

Curriculum: Solar Carpentry

Credits: 61

Student Level: High School Graduate

Duration: 46 Weeks, 28.0 hrs per week

Topics Covered Extensively: Energy Conservation; Energy Conversion; Passive Solar Technology; Domestic Hot Water

Number of Times Taught: 1

Average Enrollment: 10

*Use of Sol. Ener.-Homeowners, Builders*

Instructor: Ohlendorf, Vernon  
(319) 263-8250

Department: Community Services-Continued Education

Program or

Curriculum: Use of Sol. Ener.-Homeowners, Builders

Student Level: All levels

Duration: 10 Weeks, 3.0 hrs per week

Contact Hours: 30

Classroom: 20

Laboratory: 10

Number of Times Taught: 2

Average Enrollment: 15

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SCOTT COMMUNITY COLLEGE  
BETTEENDORF, Iowa 52722  
(319) 359-7531

(4074)

## PROGRAMS AND CURRICULA

*\*Solar Energetics Technology*

Degree: AD, Solar Energetics Technology  
(319) 359-7531

Students Taking or Completing Offering:

## Architect, Researcher

Installer-Residential (Solar System),  
Installer-Commercial (Solar System),  
Solar Technician

## SOLAR RELATED COURSES

*\*Courses: Instal., Repair - Heat, Ref., A/C*

Program or

Curriculum: \*Solar Energetics Technology

Topics Covered Extensively: Energy Storage; Photovoltaics; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Process Heat, Industrial; Space Heating; Space Cooling

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## Vocational/Technical Colleges

## WESTERN IOWA TECH

SIOUX CITY, Iowa 51102

(712) 276-0380

(7316)

## PROGRAMS AND CURRICULA

*Solar Systems Technology*

Degree: AD, Applied Sci. in Sol. Sys. Tech.

Contact: Chadwick, Richard

(712) 276-0380

Students Taking or Completing Offering:  
Installer-Residential (Solar System),  
Installer-Commercial (Solar System),  
Solar Technician, Other

## SOLAR RELATED COURSES

*Blueprint Reading*

Instructor: Forsling, M. G.  
(712) 276-0380

Course Number: 274-3005

Department: Trades & Industry

Program or  
Curriculum: Solar Systems Technology

Credits: 4

Student Level: Freshman or Sophomore

Duration: 12 Weeks, 5.0 hrs per week

Contact Hours: 60

Classroom: 36

Laboratory: 24

Topics Covered Extensively: Passive Solar Technology; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design;

**Solar Systems Design; Elec'l Generation, Small Scale; Space Heating**  
**Average Enrollment:** 11

**Building Design for Solar Systems**

**Instructor:** Forsling, M. G.  
**Course Number:** (712) 276-0380  
**Department:** 274-3010  
**Program or Curriculum:** Trades & Industry  
**Credits:** Solar Systems Technology  
**Student Level:** Freshman or Sophomore  
**Duration:** 12 Weeks, 6.0 hrs per week  
**Contact Hours:** 72  
**Classroom:** 24  
**Laboratory:** 48  
**Topics Covered Extensively:** Energy Conservation; Energy Storage; Passive Solar Technology; Solar Home Construction  
**Average Enrollment:** 11

**Integrated Solar Sci. II**

**Instructor:** Forsling, M. G.  
**Course Number:** (712) 276-0380  
**Department:** 274-3006  
**Program or Curriculum:** Trades & Industry  
**Credits:** Solar Systems Technology  
**Student Level:** Freshman or Sophomore  
**Duration:** 12 Weeks, 5.0 hrs per week  
**Contact Hours:** 72  
**Classroom:** 48  
**Laboratory:** 24  
**Topics Covered Extensively:** Energy Conversion; Elec'l Generation, Small Scale; Space Heating; Space Cooling  
**Average Enrollment:** 11

**Introduction to Solar Systems**

**Instructor:** Forsling, M. G.  
**Course Number:** (712) 276-0380  
**Department:** 274-3000  
**Program or Curriculum:** Trades & Industry  
**Credits:** Solar Systems Technology  
**Student Level:** Freshman or Sophomore  
**Duration:** 12 Weeks, 3.0 hrs per week  
**Contact Hours:** 36  
**Classroom:** 36  
**Average Enrollment:** 11

**Solar Feasability Cost Analysis**

**Instructor:** Forsling, M. G.  
**Course Number:** (712) 276-0380  
**Department:** 274-3012  
**Program or Curriculum:** Trades & Industry  
**Credits:** Solar Systems Technology  
**Student Level:** Freshman or Sophomore  
**Duration:** 12 Weeks, 5.0 hrs per week  
**Contact Hours:** 60

**Classroom:** 60

**Topics Covered Extensively:** Solar Economics

**Average Enrollment:** 11

**Solar Systems Application I**

**Instructor:** Forsling, M. G.  
**Course Number:** (712) 276-0380  
**Department:** 274-3002  
**Program or Curriculum:** Trades & Industry  
**Credits:** Solar Systems Technology  
**Student Level:** Freshman or Sophomore  
**Duration:** 12 Weeks, 13.0 hrs per week  
**Contact Hours:** 156  
**Classroom:** 60  
**Laboratory:** 96  
**Topics Covered Extensively:** Energy Storage; Heat and Energy Transfer; Plumbing Techniques; Solar Collector Evaluation/Design  
**Average Enrollment:** 11

**Solar Systems Applications II**

**Instructor:** Forsling, M. G.  
**Course Number:** (712) 276-0380  
**Department:** 274-3007  
**Program or Curriculum:** Trades & Industry  
**Credits:** Solar Systems Technology  
**Student Level:** Freshman or Sophomore  
**Duration:** 12 Weeks, 11.0 hrs per week  
**Contact Hours:** 132  
**Classroom:** 60  
**Laboratory:** 72  
**Topics Covered Extensively:** Energy Conservation; Energy Conversion; Energy Storage; Plumbing Techniques; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Testing and Evaluation; Space Heating  
**Average Enrollment:** 11

**Solar Systems Maintenance**

**Instructor:** Forsling, M. G.  
**Course Number:** (712) 276-0380  
**Department:** 274-3013  
**Program or Curriculum:** Trades & Industry  
**Credits:** Solar Systems Technology  
**Student Level:** Freshman or Sophomore  
**Duration:** 12 Weeks, 6.0 hrs per week  
**Contact Hours:** 72  
**Classroom:** 24  
**Laboratory:** 48  
**Topics Covered Extensively:** Energy Storage; Solar System Components; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
**Average Enrollment:** 11

**Systems Design Engineering**

Instructor: Forsling, M. G.  
(712) 276-0380

Course Number: 274-3011  
Department: Trades & Industry  
Program or

Curriculum: Solar Systems  
Technology

Credits: 6

Student Level: Freshman or Sophomore

Duration: 12 Weeks, 8.0 hrs per week

Contact Hours: 96

Classroom: 48

Laboratory: 48

Topics Covered Extensively: Energy  
Storage; Heat and Energy Transfer;  
Solar Systems Design; Solar Systems  
Installation; Solar Systems  
Maintenance; Solar Systems Testing and  
Evaluation

Average Enrollment: 11

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**Colleges/Universities**

**BENEDICTINE COLLEGE**  
ATCHISON, Kansas 66002  
(913) 367-6110

(10256)

**SOLAR RELATED COURSES**

**Passive Solar Energy**  
Instructor: Miles, Red  
Department: Continuing Education  
Student Level: All levels  
Duration: 7 Weeks, 2.0 hrs per week  
Contact Hours: 14  
Topics Covered Extensively: Intro. to Solar Energy; Passive Solar Technology

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**EMPIORIA STATE UNIVERSITY**  
EMPIORIA, Kansas 66801  
(316) 343-1200

(1927)

**SOLAR RELATED COURSES**

**The Energy Crisis**  
Instructor: Backhus, DeWayne  
(316) 343-1200  
Course Number: PS 520  
Department: Liberal Arts and Sci.-Phys. Sci.  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy; Passive Solar Technology  
Number of Times Taught: 13  
Average Enrollment: 15

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**KANSAS MAIN CAMPUS, U OF LAWRENCE**, Kansas 66045  
(913) 864-2700

(1948)

**SOLAR RELATED COURSES**

**Solar Energy**  
Instructor: Nerecek, I.V.  
(913) 864-3181  
Course Number: ME614  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 18 Weeks, 3.0 hrs per week  
Contact Hours: 54  
Classroom: 54  
Topics Covered Extensively: Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating  
Number of Times Taught: 4  
Average Enrollment: 20

**Solar Energy System Design**

Instructor: Deahr, Thomas Scott  
(913) 864-4281

Course Number: 731  
Department: Architectural Engineering

Credits: 3  
Student Level: College Graduate  
Duration: 16 Weeks, 5.0 hrs per week  
Contact Hours: 80  
Classroom: 32  
Laboratory: 48

Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Storage; Intro. to Solar Energy; Plumbing Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating

Number of Times Taught: 4  
Average Enrollment: 25

**Thermal Properties of Building Materials**

Instructor: Deahr, Thomas Scott  
(913) 864-4281

Course Number: 728  
Department: Architectural Engineering

Credits: 2  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48

Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Space Heating

Number of Times Taught: 1  
Average Enrollment: 14

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**KANSAS ST U AGR & APP SCI**  
MANHATTAN, Kansas 66506  
(913) 532-6011

(1928)

**PROGRAMS AND CURRICULA****Architecture**

Degree: Architecture  
Contact: Foerster, Bernd  
(913) 532-5950

Students Taking or Completing Offering:  
Architect

**SOLAR RELATED COURSES****Architectural Design Studio 3**

Instructor: Coates, Gary  
(913) 532-5953

Course Number: 105-603  
Department: Architecture  
Program of Curriculum: Architecture  
Credits: 5  
Student Level: Junior or Senior

Duration: 16 Weeks, 15.0 hrs per week  
 Contact Hours: 240  
 Laboratory: 240

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Wind Power; Small Systems  
 Average Enrollment: 20

**Architectural Design Studio, 4**

Instructor: Coates, Gary  
 (913) 532-5953  
 Course Number: 105-604  
 Department: Architecture  
 Program or Curriculum: Architecture  
 Credits: 5

Student Level: Junior or Senior  
 Duration: 16 Weeks, 15.0 hrs per week  
 Contact Hours: 240  
 Laboratory: 240

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Wind Power; Small Systems  
 Average Enrollment: 20

**Architectural Design Studio, 5**

Instructor: Coates, Gary  
 (913) 532-5953  
 Course Number: 105-801  
 Department: Architecture  
 Program or Curriculum: Architecture  
 Credits: 5

Student Level: Junior or Senior  
 Duration: 16 Weeks, 15.0 hrs per week  
 Contact Hours: 240  
 Laboratory: 240

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Wind Power; Small Systems  
 Average Enrollment: 20

**Basic Construction Technology**

Instructor: Chapman  
 (913) 532-5953  
 Course Number: 104-290  
 Department: Pre-Design Professions  
 Program or Curriculum: Architecture

Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 8  
 Number of Times Taught: 5  
 Average Enrollment: 250

**Energy Use and Control in Agri. Systems**

Instructor: Clark, Stanley J.  
 (913) 532-5580

Course Number: 505  
 Department: Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 5.0 hrs per week  
 Contact Hours: 75  
 Classroom: 30  
 Laboratory: 45  
 Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conservation  
 Number of Times Taught: 6  
 Average Enrollment: 15

**Environmental Design of Farm Buildings**

Instructor: Spillman, Charles K.  
 (913) 532-5580  
 Course Number: 505 510  
 Department: Agricultural Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 5.0 hrs per week  
 Contact Hours: 80  
 Classroom: 32  
 Laboratory: 48  
 Number of Times Taught: 6  
 Average Enrollment: 17

**Environmental Design Studio**

Instructor: Miller  
 (913) 532-5953  
 Course Number: 104-261  
 Department: Pre-Design Professions  
 Program or Curriculum: Architecture  
 Credits: 4  
 Student Level: Freshman or Sophomore  
 Duration: 16 Weeks, 4.0 hrs per week  
 Contact Hours: 64  
 Laboratory: 64  
 Number of Times Taught: 5  
 Average Enrollment: 300

**Environmental Systems in Architecture**

Instructor: Jahnke, William R.  
 (913) 532-5950  
 Course Number: 105-515  
 Department: Architecture  
 Program or Curriculum: Architecture  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Topics Covered Extensively: Energy Conservation; Passive Solar Technology; Plumbing Techniques; Sheet Metal Techniques; Solar System Components;

Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling  
Number of Times Taught: 6  
Average Enrollment: 100

*Environmental Systems in Architecture*  
Instructor: Coates, Gary  
(913) 532-5953  
Course Number: 105-413  
Department: Architecture  
Program or Curriculum: Architecture  
Credits: 4  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 64  
Classroom: 48  
Laboratory: 16  
Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Space Heating  
Average Enrollment: 140

*Intro. to Alternate Energy Sources*  
Instructor: Eckhoff, H. Dean  
(913) 532-5624  
Course Number: 500-420  
Department: General Engineering  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Swimming Pool Heating; Space Heating; Wind Power, Small Systems  
Number of Times Taught: 4  
Average Enrollment: 10

*Solar Energy Conversion Processes*  
Instructor: Eckhoff, H. Dean  
(913) 532-5624  
Course Number: 500-380  
Department: General Engineering  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Swimming Pool Heating; Space Heating; Wind Power, Small Systems  
Number of Times Taught: 2

Average Enrollment: 7  
*Solar Energy Thermal Processes*  
Instructor: Ball, H. D.  
(913) 532-5610  
Course Number: 560-680  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 3  
Average Enrollment: 25

*Theory of Design*  
Instructor: Coates, Gary  
(913) 532-5953  
Course Number: 105-715  
Department: Architecture  
Program or Curriculum: Architecture  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Passive Solar Technology; Solar Energy Policy Development; Solar Economics; Solar Law/Legislation; Space Heating; Space Cooling

*Topics in Building Construction Systems*  
Instructor: Coates, Gary  
(913) 532-5953  
Course Number: 105-735  
Department: Architecture  
Program or Curriculum: Architecture  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Laboratory: 48  
Topics Covered Extensively: Energy Conservation; Energy Storage; Passive Solar Technology; Solar Energy Policy Development; Solar Law/Legislation; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Space Heating; Space Cooling  
Number of Times Taught: 1  
Average Enrollment: 7

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**PITTSBURG STATE UNIVERSITY**Pittsburg, Kansas 66762  
(316) 231-7000**SOLAR RELATED COURSES****Energy Efficiency Design**

Instructor: Hightower, Daniel L.  
(316) 231-7000  
Course Number: 736  
Department: Technology  
Credits: 3  
Student Level: Junior or Senior  
Duration: 18 Weeks, 3.0 hrs per week  
Contact Hours: 54  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Space Cooling  
Number of Times Taught: 1  
Average Enrollment: 20

**Solar Energy**

Instructor: Backes, Robert  
(316) 231-7000  
Course Number: 736  
Department: Physics  
Credits: 3  
Student Level: Junior or Senior  
Duration: 8 Weeks, 6.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Law/Legislation; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating

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**WICHITA STATE UNIVERSITY**  
1945 Fairmount  
WICHITA, Kansas 67208  
(316) 689-3456

**SOLAR RELATED COURSES****Energy-Alternatives and Impact**

Instructor: Berg, J.R.  
(316) 689-3141  
Course Number: 690  
Department: Geology  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Number of Times Taught: 14  
Average Enrollment: 13

**Energy, Resources & Environment**

Instructor: Gries, J.C.; Berg, J.R.  
(316) 689-3141  
Course Number: 300G  
Department: Geology  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Number of Times Taught: 20  
Average Enrollment: 200

**Inst. Math. & Proc.**

Instructor: Webb, Edgar  
(316) 689-3350  
Course Number: I.E.751  
Department: Industrial Education  
Credits: 3  
Student Level: Junior or Senior  
Duration: 4 Weeks, 15.0 hrs per week  
Contact Hours: 60  
Classroom: 30  
Laboratory: 30  
Topics Covered Extensively: Appropriate Technology; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components  
Number of Times Taught: 2  
Average Enrollment: 9

**Meteorology**

Instructor: Carrier, Cecil  
(316) 689-3141  
Course Number: GEOG 235  
Department: Geology/Geography  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 4.0 hrs per week  
Contact Hours: 64  
Classroom: 32  
Laboratory: 32  
Average Enrollment: 36

**ME Special Topics**

Instructor: Graham, A.R.  
(316) 689-3402  
Course Number: ME751  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design  
Number of Times Taught: 11  
Average Enrollment: 20

**Petroleum Geology**

Instructor: Berg, J.R.  
(316) 689-3141  
Course Number: 692  
Department: Geology  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48

Kansas

Solar Energy Research Institute

Classroom: 48  
Number of Times Taught: 54  
Average Enrollment: 13

Urban Alternative Energy Sources

Instructor: Graham, A.R.

Course Number: 751  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources

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Community/Junior Colleges

BARTON CO CHTY JR. COLLEGE (4608)  
GREAT BEND, Kansas 67530  
(316) 792-2701

PROGRAMS AND CURRICULA

Solar Energy Technology  
Degree: AD, Applied Science  
Contact: Greer, Neil  
(316) 792-2701

Students Taking or Completing Offerings:  
Trade Specialty

SOLAR RELATED COURSES

Solar Energy and Applied Science I  
Instructor: Greer, Neil  
(316) 792-2701  
Course Number: 6900  
Department: Applied Sciences  
Program or Curriculum: Solar Energy Technology  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 17 Weeks, 6.0 hrs per week  
Contact Hours: 102  
Classroom: 51  
Laboratory: 51  
Topics Covered Extensively: Appropriate Technology; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 7

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GARDEN CITY COMMUNITY JC  
GARDEN CITY, Kansas 67846  
(316) 276-7611

(1919)

SOLAR RELATED COURSES

Solar Energy  
Instructor: Hundley, Gerald  
(316) 276-7611  
Course Number: 274-083  
Department: Industrial Educ.  
Credits: 3  
Student Level: All levels  
Duration: 17 Weeks, 3.0 hrs per week  
Contact Hours: 51  
Classroom: 51  
Number of Times Taught: 5  
Average Enrollment: 8

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Vocational/Technical Colleges

KANSAS TECHNICAL INST (4611)  
SALINA, Kansas 67401  
(913) 825-0275

PROGRAMS AND CURRICULA

Mech. Engineering Tech. -Solar Option  
Degree: AD, Science  
Contact: Ashburn, M.H.  
(913) 825-0275  
Students Taking or Completing Offerings:  
Solar Technician

SOLAR RELATED COURSES

Solar System Design Technology I  
Instructor: Ashburn, M.  
(913) 825-0275  
Course Number: MT2832  
Department: Mechanical Technology  
Program or Curriculum: Mech. Engineering Tech.  
-Solar Option  
Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 4.0 hrs per week  
Contact Hours: 64  
Classroom: 16  
Laboratory: 48  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Plumbing Techniques; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating

*Solar System Design Technology II*

Instructor: Ashburn, M.

(913) 825-0275

Course Number: HT2844

Department: Mechanical Technology

Program: Mech. Engineering

Tech.-Solar Option

Credits: 4

Student Level: Freshman or Sophomore

Duration: 16 Weeks, 8.0 hrs per week

Contact Hours: 128

Classroom: 42

Laboratory: 86

Topics Covered Extensively: Energy

Storage; Heat and Energy Transfer;

Intro. to Solar Energy; Passive Solar

Technology; Plumbing Techniques; Solar

System Components; Solar Economics;

Solar Collector Evaluation/Design;

Solar Systems Design; Solar Systems

Installation; Solar Systems Testing and

Evaluation; Domestic Hot Water; Space

Heating

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**Other Educational Institutions**

**UNIVERSITY FOR MAN**

(90150)

1221 Thurston Avenue

Manhattan, Kansas 66502

**PROGRAMS AND CURRICULA**

**Appropriate Technology**

Contact: Coates, Gary

(913) 532-5866

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**Colleges/Universities**

**KENTUCKY, UNIVERSITY OF**  
LEXINGTON, Kentucky 40506  
(606) 258-9000

(1989)

**SOLAR RELATED COURSES***Advanced Topics in Solar Energy*

Instructor: Birkebak, R.C.  
(606) 257-2712  
Course Number: ME 782/380  
Department: Mechanical Engineering  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Design  
Number of Times Taught: 1  
Average Enrollment: 10

*Functional Des. of Agri. Structures*

Instructor: Parker, B.F.  
(606) 258-5671  
Course Number: AEN 427  
Department: Agricultural Engineering  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design  
Number of Times Taught: 1  
Average Enrollment: 4

*Solar Housing Workshop*

Instructor: Levine, Richard  
(606) 258-4367  
Course Number: APE 963/4  
Department: Architecture  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Space Cooling  
Number of Times Taught: 8  
Average Enrollment: 15

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**NORTHERN KY UNIVERSITY**

(9275)

HIGHLAND HEIGHTS, Kentucky 41076  
(606) 292-5100**SOLAR RELATED COURSES***Solar Energy I*

Instructor: McPheterson, Mike  
(606) 292-5409  
Course Number: PHY299  
Department: Physics  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 5.0 hrs per week  
Contact Hours: 75  
Classroom: 15  
Laboratory: 60  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating

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**WESTERN KY UNIVERSITY**

(2002)

BOWLING GREEN, Kentucky 42101  
(502) 745-0111**SOLAR RELATED COURSES***Solar Collector Construction*

Instructor: H.M. Healey  
(502) 745-0111  
Course Number: ET475  
Department: Engineering Technology  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 10  
Laboratory: 6  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Testing and Evaluation  
Number of Times Taught: 1  
Average Enrollment: 15

*Solar Fundamentals For Buildings*

Instructor: Healey, H.M.  
(502) 745-2461  
Course Number: ET347  
Department: Engineering Technology  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy

Storage; Heat and Energy Transfer;  
Intro. to Solar Energy; Passive Solar  
Technology; Solar System Components;  
Solar Economics; Solar Home  
Construction; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Domestic Hot Water; Space  
Heating

Number of Times Taught: 0

**HKU Solar Heating Systems**

Instructor: Healey, H.M.

(502) 745-2461

Department: Engineering Technology

Student Level: All levels

Duration: 1 Weeks, 32.0 hrs per week

Contact Hours: 32

Classroom: 28

Laboratory: 4

Topics Covered Extensively: Energy  
Conservation; Energy Storage; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Solar System Components; Solar  
Economics; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Installation;  
Solar Systems Maintenance; Solar  
Systems Testing and Evaluation;  
Domestic Hot Water; Space Heating

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Louisiana

Colleges/Universities

LA STATE U AND ACM C  
BATON ROUGE, Louisiana 70803  
(504) 388-1471

SOLAR RELATED COURSES

*Mechanical Engineering Problems*

Instructor: Arnes/ Maples  
(504) 388-5792

Course Number: 7933

Department: Mechanical Engineering

Credits: 3

Student Level: College Graduate

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Topics Covered Extensively: Energy

Conversion; Energy Storage;

Photovoltaics; Solar System Components;

Solar Collector Evaluation/Design;

Solar Systems Design

Number of Times Taught: 2

Average Enrollment: 10

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LOUISIANA TECH UNIVERSITY

PUSTON, Louisiana 71272  
(318) 257-0211

SOLAR RELATED COURSES

*Solar Energy Design*

Instructor: Barron, Randall F.  
(318) 257-4141

Course Number: 442

Department: Mechanical Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 12 Weeks, 3.8 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Intro. to

Solar Energy; Plumbing Techniques;

Solar System Components; Solar

Economics; Solar Home Construction;

Solar Collector Evaluation/Design;

Solar Systems Design; Domestic Hot

Water; Swimming Pool Heating; Elec'l

Generation, Central; Process Heat,

Agricultural; Space Heating; Space

Cooling

Number of Times Taught: 0

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NEW ORLEANS, UNIVERSITY OF  
NEW ORLEANS, Louisiana 70122  
(504) 283-0500

SOLAR RELATED COURSES

*Design of Solar Heat. and Cool. Systems*

Instructor: Russo, Edwin P.  
(504) 283-0652

Course Number: 4720

Department: Engineering/Mechanical

Solar Energy Research Institute

Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Classroom: 42

Topics Covered Extensively: Appropriate

Technology; Energy Storage; Heat and

Energy Transfer; Intro. to Solar

Energy; Solar System Components; Solar

Economics; Solar Collector

Evaluation/Design; Solar Systems

Design; Solar Systems Installation;

Solar Systems Maintenance; Domestic Hot

Water; Swimming Pool Heating; Process

Heat, Agricultural; Process Heat,

Industrial; Space Heating; Space

Cooling

Number of Times Taught: 1

Average Enrollment: 35

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TULANE U OF LOUISIANA

NEW ORLEANS, Louisiana 70118  
(504) 865-4011

(2029)

SOLAR RELATED COURSES

*Solar Thermal Processes*

Instructor: Hamilton, DeWitt C.  
(504) 865-6176

Course Number: MET 619

Department: Mech. Engng.

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Energy

Storage; Heat and Energy Transfer;

Intro. to Solar Energy; Solar Collector

Evaluation/Design; Solar Systems

Design; Domestic Hot Water; Space

Heating; Space Cooling

Number of Times Taught: 5

Average Enrollment: 15

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Community Colleges

DELCAODO COLLEGE

NEW ORLEANS, Louisiana 70115  
(504) 406-7393

(4626)

SOLAR RELATED COURSES

*Applied Solar Energy*

Instructor: [unclear]

Course Number: [unclear]

1978-79 National Solar Energy Education Directory

Louisiana

Department: Eng. and Indus.  
Tech./Mech. Engine.  
Tech.

Credits: 3

Student Level: Freshman or Sophomore

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Appropriate  
Technology; Energy Conservation; Energy  
Storage; Heat and Energy Transfer;  
Passive Solar Technology; Plumbing  
Techniques; Solar System Components;  
Solar Economics; Solar Home  
Construction; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Installation;  
Solar Systems Maintenance; Domestic Hot  
Water; Swimming Pool Heating; Process  
Heat; Industrial; Space Heating; Space  
Cooling; Wind Power; Small Systems

Number of Times Taught: 2

Average Enrollment: 30

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**Maine****Solar Energy Research Institute****Colleges/Universities**

**ATLANTIC, COLLEGE OF THE** (11385)  
**BAR HARBOR, Maine**  
 (207) 288-5015

**PROGRAMS AND CURRICULA***Environmental Design*

Degree: BA, Human Ecology  
 Contact: Calvario, Roy  
 (207) 284-5015

Students Taking or Completing Offering:  
 Architect, Educator, Researcher,  
 Do-it-yourself Homeowner

**SOLAR RELATED COURSES***Alternate Energy*

Instructor: Lyman, Harris  
 Department: Environmental Design  
 Program or Curriculum: Environmental Design  
 Topics Covered Extensively: Alternate Energy Sources; Heat and Energy Transfer; Passive Solar Technology; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling; Wind Power, Small Systems

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**COLBY COLLEGE** (2039)  
**WATERVILLE, Maine**  
 (207) 873-1131

**SOLAR RELATED COURSES***Energy Economics*

Instructor: Tietenberg, Tom  
 (207) 547-3339  
 Course Number: 311  
 Department: Economics  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 12 Weeks, 3.0 hrs per week  
 Contact Hours: 36  
 Classroom: 36  
 Topics Covered Extensively: Alternate Energy Sources  
 Number of Times Taught: 2  
 Average Enrollment: 18

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**MAINE AT FORT KENT, U OF** (2041)  
**FORT KENT, Maine**  
 (207) 834-3162

**SOLAR RELATED COURSES***Energy Conservation; Alternate Sources*

Instructor: Thiele, Eberhard  
 (207) 834-3162  
 Course Number: ET322  
 Department: Environmental Studies

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation;

Intro. to Solar Energy

Number of Times Taught: 1

Average Enrollment: 10

\*\*\*\*\*

**MAINE AT ORONO, U OF** (2053)  
**ORONO, Maine**  
 (207) 581-7011

**SOLAR RELATED COURSES***Energy and Man*

Instructor: Smith, Norman  
 (207) 581-7265  
 Course Number: AE 41  
 Department: Agric. Engineering  
 Credits: 3  
 Student Level: All levels  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 42  
 Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Intro. to Solar Energy; Solar Economics

Number of Times Taught: 8

Average Enrollment: 25

*Mechanical Engineering Laboratory*

Instructor: Hill, Richard C.  
 (207) 581-7228  
 Course Number: ME 72  
 Department: Engineering & Science  
 Credits: 2  
 Student Level: Junior or Senior  
 Duration: 13 Weeks, 3.0 hrs per week  
 Contact Hours: 39  
 Laboratory: 39  
 Topics Covered Extensively: Biomass Conversion; Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 24

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**Other Educational Institutions**

1978-79 National Solar Energy Education Directory

Maine

CORNERSTONES, WING SCHOOL OF SHELTER TECHNOLOGY  
54 Cumberland St.  
Brunswick, Maine 04011

SOLAR RELATED COURSES

*Advanced New House*

Course Number: B  
Duration: 3 Weeks, 35.0 hrs per week  
Contact Hours: 105  
Topics Covered Extensively: Passive Solar Technology; Solar Home Construction

*Passive Solar Building Design*

(207) 729-0540  
Course Number: E  
Duration: 1 Weeks, 35.0 hrs per week  
Contact Hours: 35  
Topics Covered Extensively: Passive Solar Technology; Solar Home Construction

*Passive Solar House Design & Construction*

Instructor: Wing, Charles  
(207) 729-0540  
Course Number: A  
Credits: 3  
Student Level: All levels  
Duration: 8 Weeks, 6.0 hrs per week  
Contact Hours: 48  
Class #: 45  
Topics Covered Extensively: Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction  
Number of Times Taught: 30  
Average Enrollment: 30

*Retrofitting Existing Structures*

(207) 729-0540  
Course Number: C  
Duration: 3 Weeks, 35.0 hrs per week  
Contact Hours: 105  
Topics Covered Extensively: Alternate Energy Sources; Passive Solar Technology; Solar Home Construction

*Solar Greenhouses*

(207) 729-0540  
Course Number: D  
Duration: 1 Weeks, 35.0 hrs per week  
Contact Hours: 35  
Topics Covered Extensively: Passive Solar Technology; Solar Home Construction

*The Design Workshop*

Instructor: Colburn, Gary  
(207) 729-0540  
Topics Covered Extensively: Passive Solar Technology; Solar Home Construction

Portland Vocational Center  
Portland, Maine 04111

(90410)

SOLAR RELATED COURSES

\*Training in Solar Installation  
Topics-Covered Extensively: Solar Systems Installation

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SHELTER INSTITUTE  
58 Center Street  
Bath, Maine 04530

(90240)

SOLAR RELATED COURSES

\*Passive Solar Design  
Instructor: Hennin, Patsy  
(207) 443-9084  
Duration: 15 Weeks  
Topics Covered Extensively: Passive Solar Technology; Solar Home Construction

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**Maryland****Solar Energy Research Institute****Colleges/Universities**

**LOYOLA COLLEGE** (2078)  
 BALTIMORE, Maryland 21210  
 (301) 323-1010

**SOLAR RELATED COURSES***Energy and Environment*

Instructor: Haig, Frank R.  
 (301) 323-1010  
 Course Number: PH 150  
 Department: Physics, Eng'g.,  
 Computer Sci.  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45

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**MD COLLEGE PARK CAM, U OF** (2103)  
 COLLEGE PARK, Maryland 20742  
 (301) 454-0100

**PROGRAMS AND CURRICULA**

*Mechanical Engr./Solar Energy*  
 Degree: BS, Science  
 Contact: Cunniff, P. F.  
 (301) 454-2410

**SOLAR RELATED COURSES**

*Engineering Applications of Solar Energy*  
 Instructor: Allen, R. W.  
 (301) 454-4994  
 Course Number: ENME 415  
 Department: Mechanical Engineering  
 Program or Curriculum: Mechanical Engr./ Solar Energy  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 40

*Environmental Systems in Architecture*

Instructor: Lord, David  
 (301) 454-3428  
 Course Number: ARCH 514  
 Department: Architecture  
 Program or Curriculum: Mechanical Engr./ Solar Energy  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 14 Weeks, 6.0 hrs per week  
 Contact Hours: 84

Classroom: 56

Laboratory: 28

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Systems Design; Domestic Hot Water; Space Heating

Number of Times Taught: 4

Average Enrollment: 7

*Solar Energy Applications in Buildings*

Instructor: Allen, R. W.  
 (301) 454-4994  
 Course Number: ENES 414  
 Department: Mechanical Engineering  
 Program or Curriculum: Mechanical Engr./ Solar Energy  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48  
 Topics Covered Extensively: Energy Storage; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 5  
 Average Enrollment: 35

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**TOWSON STATE UNIVERSITY** (2099)  
 BALTIMORE, Maryland 21204  
 (301) 321-2000

**SOLAR RELATED COURSES**

*Alt. Ener. Sources - Homemaker*  
 Instructor: Beckey, R.  
 (301) 321-2977  
 Student Level: All levels  
 Duration: 1 Weeks, 6.0 hrs per week  
 Contact Hours: 6  
 Topics Covered Extensively: Alternate Energy Sources; Passive Solar Technology; Solar Collector Evaluation/Design; Domestic Hot Water

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**US NAVAL ACADEMY** (2101)  
 ANNAPOLIS, MARYLAND, Maryland 21402  
 (301) 267-6100

**SOLAR RELATED COURSES**

*Energy Conversion*  
 Instructor: Wu, C.  
 (301) 267-3186  
 Course Number: EM443  
 Department: Mechanical Engineering  
 Credits: 3

## 1978-79 National Solar Energy Education Directory

Maryland

Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Intro. to Solar Energy; Solar Economics; Solar Collector Evaluation/Design; Domestic Hot Water  
Number of Times Taught: 5  
Average Enrollment: 50

*Ocean Energy Conversion*

Instructor: McCormick, M.E.  
(301) 267-3873  
Course Number: EN474  
Department: Naval Systems Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Alternate Energy Sources  
Number of Times Taught: 1  
Average Enrollment: 30

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Average Enrollment: 12

DUNDALK CHTY COLLEGE  
BALTIMORE, Maryland 21222  
(301) 282-6700

(9935)

## SOLAR RELATED COURSES

*Solar Energy: Installation and Maintenance*

Instructor: Leddon, Jack  
(301) 282-6700  
Department: Math/Science  
Student Level: All levels  
Duration: 15 Weeks, 2.0 hrs per week  
Contact Hours: 30  
Classroom: 15  
Laboratory: 15  
Topics Covered Extensively: Energy Storage; Intro. to Solar Energy; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Home Construction; Solar Law/Legislation; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Space Heating; Space Cooling  
Number of Times Taught: 2  
Average Enrollment: 15

## Community/Junior Colleges

ALLEGANY CHTY COLLEGE (2057)  
CUNNINGHAM, Maryland 21502  
(301) 724-7700

## SOLAR RELATED COURSES

*Industrial Systems I*  
Instructor: Myers, Robert W.  
(301) 724-7700  
Course Number: 203  
Department: Electromechanical  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 4.0 hrs per week  
Contact Hours: 64  
Classroom: 26  
Laboratory: 38  
Number of Times Taught: 3  
Average Enrollment: 12

*Industrial Systems II*  
Instructor: Myers, Robert W.  
(301) 724-7700

Course Number: 204  
Department: Electromechanical  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 4.0 hrs per week  
Contact Hours: 64  
Classroom: 26  
Laboratory: 38  
Number of Times Taught: 3

HARFORD COMMUNITY COLLEGE  
BEL AIR, Maryland 21014  
(301) 838-1000

(2075)

## SOLAR RELATED COURSES

*Principles and Applications of Solar Energy*  
Course Number: 095  
Department: Continuing Education  
Student Level: All levels  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Topics Covered Extensively: Intro. to Solar Energy; Passive Solar Technology

## Vocational/Technical Colleges

RETS TECH CENTER  
511 Russell Street  
Baltimore, Maryland 21230  
(301) 727-6863

(90050)

PROGRAMS AND CURRICULA

Refrig., Climate Control and Clean Air  
Degree: Refrig.-Climate Cont.-Clean  
Air  
Contact: Tickler, Earl M.  
(301) 727-6863

Students Taking or Completing Offering:  
Installer-Residential (Solar System),  
Solar Technician, Trade Specialty

SOLAR RELATED COURSES

Refrig.- Climate Control- Clean Air  
Instructor: Tickler, Earl M.  
(301) 727-6863  
Program or Curriculum: Refrig., Climate Control and Clean Air  
Student Level: High School Graduate  
Duration: 6 Weeks, 30.0 hrs per week  
Contact Hours: 180  
Classroom: 90  
Laboratory: 60  
Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Plumbing Techniques; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling

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## Colleges/Universities

**AMHERST COLLEGE**  
AMHERST, Massachusetts  
(413) 542-2000

(2115)

## SOLAR RELATED COURSES

## Energy

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**BOSTON COLLEGE**  
CHESTNUT HILL, Massachusetts  
(617) 969-0100

(2128)

## SOLAR RELATED COURSES

## Energy

Instructor: deBethune, Andre J.  
Course Number: CH 152  
Department: Art and Sci., Chem.,  
Even., College  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 3.0 hrs per week  
Topics Covered Extensively: Alternate  
Energy Sources; Biomass Conversion;  
Energy Conservation; Energy Conversion;  
Energy Storage; Heat and Energy  
Transfer; Intro. to Solar Energy;  
Domestic Hot Water; Wind Power, Central  
Systems; Wind Power, Small Systems  
Number of Times Taught: 4  
Average Enrollment: 25

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**BOSTON UNIVERSITY**  
BOSTON, Massachusetts  
(617) 353-2000

(2130)

## SOLAR RELATED COURSES

*Man and Energy*  
Instructor: Lichtin, Norman N.  
(617) 353-2493  
Course Number: UNI-EY-501  
Department: University Professors  
Credits: 4  
Student Level: Junior or Senior  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Classroom: 39

*Solar Heating*

Course Number: MET EM 510  
Department: Metropolitan College  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Energy  
Conservation; Energy Conversion; Energy  
Storage; Heat and Energy Transfer;  
Solar System Components; Solar  
Economics; Solar Collector  
Evaluation/Design; Domestic Hot Water;

## Space Heating

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**BRIDGEWATER STATE COLLEGE**  
BRIDGEWATER, Massachusetts  
(617) 697-8321

(2183)

## SOLAR RELATED COURSES

*Solar Energy*  
Instructor: Blackford, Paul A.  
(617) 697-8321  
Course Number: GE 412  
Department: Earth Sciences and  
Geography  
Credits: 3  
Student Level: Junior or Senior  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42  
Topics Covered Extensively: Heat and  
Energy Transfer; Intro. to Solar  
Energy; Passive Solar Technology; Solar  
System Components; Solar Economics;  
Solar Collector Evaluation/Design;  
Solar Systems Design; Domestic Hot  
Water; Space Heating  
Number of Times Taught: 6  
Average Enrollment: 19

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**CLARK UNIVERSITY**  
WORCESTER, Massachusetts  
(617) 793-7177

(2139)

## SOLAR RELATED COURSES

*Alternative Energy Systems Laboratory*  
Instructor: Gottlieb, Albert  
(617) 793-7439  
Course Number: STS 132  
Department: Science, Technology and  
Society  
Student Level: Junior or Senior  
Duration: 14 Weeks, 6.0 hrs per week  
Contact Hours: 84  
Topics Covered Extensively: Alternate  
Energy Sources; Energy Conversion; Heat  
and Energy Transfer; Intro. to Solar  
Energy; Photovoltaics; Solar Collector  
Evaluation/Design; Solar Systems  
Testing and Evaluation; Domestic Hot  
Water; Elec'l Generation, Small Scale;  
Space Heating; Wind Power, Small  
Systems  
Number of Times Taught: 2  
Average Enrollment: 10

*Solar and Wind Energy for Home Use*

Instructor: Russell, John I.  
(617) 852-3753  
Course Number: ID 109  
Department: Prof. and Cont. Edu.  
Credits: 3  
Student Level: All levels  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42

**Massachusetts****Solar Energy Research Institute**

Classroom: 42

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Elec'l Generation, Small Scale; Space Heating; Wind Power, Central Systems; Wind Power, Small Systems

Number of Times Taught: 2

Average Enrollment: 18

**Solar Energy**

Instructor: Davies, John  
 Course Number: STS-131  
 Department: Science, Technology, Society  
 Credits: 4  
 Student Level: All levels  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 42  
 Classroom: 42  
 Topics Covered Extensively: Intro. to Solar Energy; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 40

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**HARVARD UNIVERSITY** (2155)  
 CAMBRIDGE, Massachusetts  
 (617) 495-1000

**SOLAR RELATED COURSES**

**Solar Heating: Basic Issues**  
 Instructor: Hapgood, William  
 Department: Center for Lifelong Learning  
 Student Level: All levels  
 Duration: 6 Weeks, 2.0 hrs per week  
 Contact Hours: 12  
 Number of Times Taught: 0

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**LOWELL, UNIVERSITY OF** (2161)  
 LOWELL, Massachusetts  
 (617) 454-7811

**PROGRAMS AND CURRICULA**

**Appl. Physics - Solar Ener. Option**  
 Degree: PhD, MS, Physics, Solar Energy Option  
 Contact: Filippone, William  
 (617) 454-7811  
 Students Taking or Completing Offering:  
 Researcher, Solar Engineer

**Solar Energy**  
 Degree: MS, BS, Engineering or Science  
 Contact: Filippone, William  
 (617) 454-7811

**Students Taking or Completing Offering:**  
 Researcher, Solar Engineer

**SOLAR RELATED COURSES****Advanced Solar Energy**

Instructor: Filippone, William  
 (617) 454-7811  
 Course Number: 24-513  
 Department: Nuclear Engineering  
 Program or Curriculum: Appl. Physics - Solar Ener. Option  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Elec'l Generation, Central; Elec'l Generation, Small Scale; Space Heating; Space Cooling; Wind Power, Small Systems  
 Number of Times Taught: 1  
 Average Enrollment: 10

**Geothermal and Wind Energy Systems**

Instructor: Sheff, James R.  
 (617) 454-7811  
 Course Number: 0  
 Department: Nuclear Engineering  
 Program or Curriculum: 24-530  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Alternate Energy Sources; Heat and Energy Transfer; Wind Power, Central Systems; Wind Power, Small Systems  
 Number of Times Taught: 1  
 Average Enrollment: 15

**Solar Energy**

Instructor: Filippone, William  
 (617) 454-7811  
 Course Number: 24-425  
 Department: Nuclear Engineering  
 Program or Curriculum: Solar Energy  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 2

Average Enrollment: 18

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**MASS AMHERST CAMPUS, U OF**  
**AMHERST, Massachusetts**  
**(413) 545-0111**

**PROGRAMS AND CURRICULA****Energy Program**

Degree: BS, Mechanical  
           Engineering-Energy Option  
 Contact: Cromack, Duane  
           (413) 545-2756

**SOLAR RELATED COURSES****Engineering Wind Power Systems**

Instructor: Cromack, Duane E.  
           (413) 545-2756  
 Course Number: NE3/90C90H  
 Department: Mechanical Engineering  
 Program or  
     Curriculum: Energy Program  
 Credits: 33  
 Student Level: Junior or Senior  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 42  
 Classroom: 37  
 Laboratory: 5

Topics Covered Extensively: Appropriate  
  Technology; Energy Conversion; Solar  
  Collector Evaluation/Design; Solar  
  Systems Design; Solar Systems Testing  
  and Evaluation; Wind Power, Small  
  Systems

Number of Times Taught: 4  
 Average Enrollment: 20

**Solar and Direct Energy Conversion**

Instructor: McGowan, J.  
 Course Number: 570  
 Department: Mechanical Engineering  
 Program or  
     Curriculum: Energy Program  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 42  
 Topics Covered Extensively: Energy  
  Conversion; Energy Storage; Heat and  
  Energy Transfer; Intro. to Solar  
  Energy; Solar Collector  
  Evaluation/Design; Solar Systems  
  Design; Space Heating  
 Number of Times Taught: 4  
 Average Enrollment: 20

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**MASS INST OF TECHNOLOGY**  
**CAMBRIDGE, Massachusetts**  
**(617) 253-1000**

**SOLAR RELATED COURSES****Design with Microclimate**

Instructor: Johnson, Tim  
           (617) 253-5965

Course Number: 4.071J  
 Department: Architecture  
 Program or  
     Curriculum: Arch. Study  
 Credits: 12  
 Student Level: All levels  
 Duration: 13 Weeks, 6.0 hrs per week  
 Contact Hours: 78  
 Classroom: 39  
 Laboratory: 39

Topics Covered Extensively: Energy  
  Conservation; Energy Conversion; Energy  
  Storage; Heat and Energy Transfer;  
  Intro. to Solar Energy; Materials  
  Research; Passive Solar Technology  
 Number of Times Taught: 3  
 Average Enrollment: 25

**Energy Economics and Policy**

Instructor: Jacoby, H.D./  
           Zimmerman, M.B.  
           (617) 253-6609

Course Number: 15.923  
 Department: Management - Applied  
  Economics

Program or  
     Curriculum: Arch. Study  
 Credits: 9  
 Student Level: College Graduate  
 Duration: 13 Weeks, 3.0 hrs per week  
 Contact Hours: 39  
 Classroom: 39

Topics Covered Extensively: Energy  
  Conservation; Marketing/Market  
  Analysis; Solar Energy Policy  
  Development  
 Number of Times Taught: 5  
 Average Enrollment: 25

**Energy Prod. from Renewable Resources**

Instructor: Fay, J.A.  
           (617) 253-2236

Course Number: 2.63  
 Department: Mechanical Engineering

Program or  
     Curriculum: Arch. Study  
 Credits: 12  
 Student Level: College Graduate  
 Duration: 12 Weeks, 3.0 hrs per week  
 Contact Hours: 36  
 Classroom: 36

Topics Covered Extensively: Alternate  
  Energy Sources; Appropriate Technology;  
  Energy Storage; Heat and Energy  
  Transfer; Passive Solar Technology;  
  Photovoltaics; Solar Collector  
  Evaluation/Design; Domestic Hot Water;  
  Space Heating; Space Cooling; Wind  
  Power, Central Systems; Wind Power,  
  Small Systems  
 Number of Times Taught: 2

Average Enrollment: 25

**Energy Technology**

Instructor: Howard, J.B.

(617) 253-4574

Course Number: 10.39

Department: Chemical Engineering

Program or Curriculum: Arch. Study

Credits: 9

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage

Number of Times Taught: 5

Average Enrollment: 34

**Materials for Advanced Energy Systems**

Instructor: Bowen, H.K./ Adler, D.

(617) 253-6892

Course Number: 3.74J

Department: Materials Science & Engineering

Program or Curriculum: Arch. Study

Credits: 12

Student Level: Junior or Senior

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Classroom: 42

Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Intro. to Solar Energy; Materials Research; Photovoltaics

**Solar Energy Systems**

Instructor: Pratt, G.W./ Thornton, R.D.

(617) 253-4636

Course Number: 6.725

Department: Elect. Engineering & Computer Sci.

Program or Curriculum: Arch. Study

Credits: 12

Student Level: Junior or Senior

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Classroom: 42

Topics Covered Extensively: Alternate Energy Sources; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Design; Wind Power, Small Systems

Number of Times Taught: 3

Average Enrollment: 20

**The Biosphere**

Instructor: Bell, E.

(617) 253-4712

Course Number: 7.13

Department: Biology

Program or Curriculum: Arch. Study

Credits: 8

Student Level: All levels

Duration: 13 Weeks, 3.0 hrs per week

Contact Hours: 39

Classroom: 39

Number of Times Taught: 3

Average Enrollment: 15

**Uses of Energy in Buildings**

Instructor: Vamosi, Stephen

(617) 253-7659

Course Number: 4.45

Department: Architecture

Program or Curriculum: Arch. Study

Credits: 9

Student Level: College Graduate

Duration: 14 Weeks, 4.0 hrs per week

Contact Hours: 56

Classroom: 56

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Economics

Number of Times Taught: 1

Average Enrollment: 50

**NORTH ADAMS STATE COLLEGE**

NORTH ADAMS, Massachusetts

(2187)

(413) 664-4511

**PROGRAMS AND CURRICULA**

**Self Sufficient Prog.-Solar**

Degree: BA, BS, NO, Physics

Contact: Seeley, William G.

(413) 664-4511

**Students Taking or Completing Offering:**

Solar Engineer, Installer-Residential (Solar System), Installer-Commercial (Solar System), Solar Technician

**SOLAR RELATED COURSES**

**Alternate Energy Techniques**

Instructor: Seeley, W.

(413) 664-4511

Course Number: DI171

Department: Physics

Program or Curriculum:

Self Sufficient

Prog.-Solar

Credits: 3

Student Level: All levels

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 30

Laboratory: 15

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating

Number of Times Taught: 6  
 Average Enrollment: 25

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**NORTHEASTERN UNIVERSITY (2199)**  
 BOSTON, Massachusetts  
 (617) 437-2000

**SOLAR RELATED COURSES****Heat and Mass Transfer**

Instructor: Foster, Arthur R.  
 (617) 437-3811  
 Course Number: 02.260  
 Department: Mechanical Engineering  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 12 Weeks, 4.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48  
 Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 20

**Sol. Water Heat., Space Heat. 310**

Instructor: Smith, Robert O./  
 Meeker, J.  
 (617) 965-5428  
 Course Number: 93.310  
 Department: Lincoln College  
 Credits: 2  
 Student Level: Junior or Senior  
 Duration: 12 Weeks, 2.0 hrs per week  
 Contact Hours: 22  
 Classroom: 22  
 Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Marketing/Market Analysis; Solar System Components; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Space Heating

**Sol. Water Heat., Space Heat. 311**

Instructor: Smith, Robert O./  
 Meeker, J.  
 (617) 965-5428  
 Course Number: 93.311  
 Department: Lincoln College  
 Credits: 2  
 Student Level: Junior or Senior  
 Duration: 12 Weeks, 2.0 hrs per week  
 Contact Hours: 22  
 Classroom: 22  
 Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Marketing/Market Analysis; Solar System Components; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Space Heating

**Solar Thermal Engineering I**

Instructor: Foster, Arthur R.  
 (617) 437-3811  
 Course Number: 02.855  
 Department: Mechanical Engineering  
 Credits: 2  
 Student Level: College Graduate  
 Duration: 12 Weeks, 2.0 hrs per week  
 Classroom: 24  
 Topics Covered Extensively: Heat and Energy Transfer; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 15

**Solar Thermal Engineering II**

Instructor: Foster, Arthur R.  
 (617) 437-3811  
 Course Number: 02.856  
 Department: Mechanical Engineering  
 Student Level: College Graduate  
 Duration: 12 Weeks, 2.0 hrs per week  
 Contact Hours: 24  
 Classroom: 24  
 Topics Covered Extensively: Heat and Energy Transfer; Elec'l Generation, Central; Elec'l Generation, Small Scale; Space Cooling  
 Number of Times Taught: 1  
 Average Enrollment: 15

**The Energy Crisis: Solar Energy**

Instructor: Williams, John A.  
 (617) 437-2991  
 Course Number: 04.862  
 Department: Chemical Engineering  
 Credits: 2  
 Student Level: College Graduate  
 Duration: 12 Weeks, 2.0 hrs per week  
 Contact Hours: 24  
 Classroom: 24  
 Topics Covered Extensively: Intro. to Solar Energy; Solar Systems Design; Domestic Hot Water  
 Number of Times Taught: 2  
 Average Enrollment: 35

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**SPRINGFIELD COLLEGE (2211)**  
 SPRINGFIELD, Massachusetts  
 (413) 787-2100

**SOLAR RELATED COURSES****Energy 81**

Instructor: Polito, Peter J.  
 (413) 787-2084  
 Course Number: PHY81  
 Department: Physics  
 Credits: 2  
 Student Level: All levels  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Classroom: 30  
 Topics Covered Extensively: Alternate

**Massachusetts****Solar Energy Research Institute**

Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Conversion;  
Energy Storage; Heat and Energy  
Transfer; Intro. to Solar Energy;  
Passive Solar Technology; Solar System  
Components; Solar Economics; Solar Home  
Construction; Domestic Hot Water;  
Swimming Pool Heating; Elec'l  
Generation, Central; Elec'l Generation,  
Small Scale; Space Heating; Space  
Cooling; Wind Power, Central Systems;  
Wind Power, Small Systems.

**Energy 82**

Instructor: Polito, Peter J.  
(413) 787-2084  
Course Number: PHY 82  
Department: Physics  
Credits: 2  
Student Level: All levels  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Conversion;  
Energy Storage; Heat and Energy  
Transfer; Intro. to Solar Energy;  
Passive Solar Technology; Solar System  
Components; Solar Economics; Solar Home  
Construction; Domestic Hot Water;  
Swimming Pool Heating; Elec'l  
Generation, Central; Elec'l Generation,  
Small Scale; Space Heating; Space  
Cooling; Wind Power, Central Systems;  
Wind Power, Small Systems.

**Energy 83**

Instructor: Polito, Peter J.  
(413) 787-2084  
Course Number: PHY 83  
Department: Physics  
Credits: 2  
Student Level: All levels  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Conversion;  
Energy Storage; Heat and Energy  
Transfer; Intro. to Solar Energy;  
Passive Solar Technology; Solar System  
Components; Solar Economics; Solar Home  
Construction; Domestic Hot Water;  
Swimming Pool Heating; Elec'l  
Generation, Central; Elec'l Generation,  
Small Scale; Space Heating; Space  
Cooling; Wind Power, Central Systems;  
Wind Power, Small Systems.

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**STHESTH MASS UNIVERSITY**  
NORTH DARTMOUTH, Massachusetts  
(617) 997-9321

(2210)

**SOLAR RELATED COURSES**

**Energy and Energy Alternatives**  
Instructor: Bento, Robert  
(617) 997-9321  
Course Number: PH 163  
Department: Physics  
Credits: 3  
Student Level: All levels  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Classroom: 39  
Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation  
Number of Times Taught: 2  
Average Enrollment: 30

**Science, Technology, and Society I**

Instructor: Bento, Robert  
(617) 997-9321  
Course Number: PH 161  
Department: Arts & Sciences/Physics  
Credits: 3  
Student Level: All levels  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Classroom: 26  
Laboratory: 13  
Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Intro. to Solar Energy  
Number of Times Taught: 5  
Average Enrollment: 100

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**KENTWORTH INST OF TECH**  
BOSTON, Massachusetts  
(617) 442-9010

(29099)

**SOLAR RELATED COURSES**

**Arch: Solar and Energy Conservation**  
Instructor: Balichi, George  
Department: Architecture  
Topics Covered Extensively: Energy  
Conservation; Intro. to Solar Energy;  
Passive Solar Technology; Solar Home  
Construction

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**WORCESTER POLY INSTITUTE**  
WORCESTER, Massachusetts  
(617) 753-1411

(2233)

**PROGRAMS AND CURRICULA**

**Major Qualifying Project**  
Degree: BS, Science  
Contact: Bötz, R.E.  
(617) 753-1411

**NORCESTER STATE COLLEGE** (2190)  
WORCESTER, Massachusetts  
(617) 752-7700

**SOLAR RELATED COURSES****Energy Applications and Techniques**

Instructor: Kelley, Robert F.  
(617) 752-7700  
Course Number: NS8-404  
Department: Natural Science/Physics  
Credits: 3  
Student Level: College Graduate  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Laboratory: 48  
Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design  
Number of Times Taught: 1  
Average Enrollment: 9

**Energy, Cons., Management for Householder**

Instructor: Dick, Daniel E.  
(617) 752-7700  
Course Number: 8-136  
Department: Natural Sciences/Physics  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 2.5 hrs per week  
Contact Hours: 39  
Classroom: 39  
Topics Covered Extensively: Energy Conservation; Domestic Hot Water; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 30

**Man's Environment -The World of Energy**

Instructor: Chodatni, Harold L.  
(617) 752-7700  
Course Number: NS 8230  
Department: Natural Science/Physics  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy  
Number of Times Taught: 1  
Average Enrollment: 25

**Shelter, Cost, Alt. Energy**

Instructor: Dick, Daniel E.  
(617) 752-7700  
Course Number: 8-135  
Department: Art  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 2.5 hrs per week

Contact Hours: 38  
Classroom: 38

Topics Covered Extensively: Alternate Energy Sources; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction; Solar Systems Design; Space Heating  
Number of Times Taught: 4  
Average Enrollment: 12

**Community/Junior Colleges**

**BRISTOL COMMUNITY COLLEGE** (2176)  
FALL RIVER, Massachusetts  
(617) 678-2811

**PROGRAMS AND CURRICULA****\*Energy Program\***

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**BUNKER HILL CMTY COLLEGE** (11210)  
CHARLESTON, Massachusetts  
(617) 241-8600

**SOLAR RELATED COURSES****\*Issues in Energy**

Instructor: Chisholm, Francis E.  
(617) 241-8600  
Department: Science  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy

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**CAPE COD CITY COLLEGE** (2168)  
WEST BARNSTABLE, Massachusetts  
(617) 362-2131

**PROGRAMS AND CURRICULA**

**Energy Systems Technology**  
Degree: AD, Science  
Contact: Panitz, Ted  
(617) 362-2131

Students Taking or Completing Offering:  
Solar Technician

**Massachusetts****Solar Energy Research Institute****SOLAR RELATED COURSES****Energy Systems I-A Survey of Energy Alternatives**

Instructor: Panitz, Ted  
(617) 362-2131

Course Number: TE 130

Department: Industry Related  
Technology Program

Program or  
Curriculum: Energy Systems  
Technology

Credits: 4

Student Level: Freshman or Sophomore

Duration: 15 Weeks, 4.0 hrs per week

Contact Hours:

Classroom: 45

Laboratory: 15

Topics Covered Extensively: Alternate  
Energy Sources

Number of Times Taught: 3

Average Enrollment: 15

Number of Times Taught: 1

Average Enrollment: 18

**FRANKLIN INST OF BOSTON**

BOSTON, Massachusetts

(1617) 423-4630

(2151)

**SOLAR RELATED COURSES****Solar and Alt. Ener. Sys. Design**

Instructor: Powe, William  
(617) 423-4630

Course Number: ES 426

Department: Energy System  
Engineering

Credits: 4

Student Level: Freshman or Sophomore

Duration: 15 Weeks, 7.0 hrs per week

Contact Hours:

Classroom: 60

Laboratory: 45

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Conversion;  
Energy Storage; Heat and Energy  
Transfer; Intro. to Solar Energy;

Plumbing Techniques; Solar Energy

Policy Development; Solar System  
Components; Solar Economics; Solar Home  
Construction; Solar Law/Legislation;  
Solar Collector Evaluation/Design;  
Solar Systems Design; Solar Systems  
Installation; Domestic Hot Water;  
Swimming Pool Heating; Space Heating;  
Space Cooling; Wind Power; Central  
Systems; Wind Power, Small Systems

Number of Times Taught: 0

Average Enrollment: 3

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**NORTH SHORE CMTY COLLEGE**

BEVERLY, Massachusetts

(1617) 927-4850

(2173)

**SOLAR RELATED COURSES****Solar Energy - New Approaches, New Hopes**

Instructor: Powell, James

(1617) 927-4850

Department: Continuing Education

Student Level: High School Graduate

Duration: 10 Weeks, 1.0 hrs per week

Contact Hours: 10

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**Energy Systems III - Solar Energy**

Instructor: Panitz, Ted

(1617) 362-2131

Course Number: TE 132

Department: Industry Related  
Technologies

Program or  
Curriculum: Energy Systems

Technology

Credits: 4

Student Level: Freshman or Sophomore

Duration: 15 Weeks, 4.0 hrs per week

Contact Hours:

Classroom: 60

Laboratory: 45

Topics Covered Extensively: Heat and

Energy Transfer; Passive Solar

Technology; Solar System Components;

Solar Economics; Solar Home

Construction; Solar Collector

Evaluation/Design; Solar Systems

Design; Domestic Hot Water; Space

Heating

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Massachusetts

SPRINGFIELD TECHNICAL CC  
SPRINGFIELD, Massachusetts  
(413) 781-6470

PROGRAMS AND CURRICULA

\*Solar Energy Option

Degree: AD, Solar Energy  
Contact: Murray, Carl  
(413) 781-6470

SOLAR RELATED COURSES

\*Courses in Solar Technology

Department: Eng'r. Tech.

Program or

Curriculum: \*Solar Energy Option  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Space Heating

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Other Educational Institutions

BLUE HILLS REG TECH INST  
CANTON, Massachusetts  
(617) 828-5800

SOLAR RELATED COURSES

Solar Heating Systems Design

Instructor: O'Leary, Timothy  
Course Number: HV-35  
Department: Heating, Ventilating  
and A/C Tech.  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating

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BOSTON ARCHITECTURAL CENTER

320 Newbury St.,  
Boston, Massachusetts

SOLAR RELATED COURSES

\*Computers, Ener. and the Built Env.

Duration: 1.0 Days

Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction

\*Solar Heating System Design

Instructor: Smith, Bob

Duration: 8 Weeks

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HEARTHWOOD

Johnson Rd.,  
Johnson Rd., Massachusetts

SOLAR RELATED COURSES

\*Passive Solar Homes

Instructor: Velonis, E./ Misson, N/  
Wehner, D.

(413) 623-6677

Duration: 3 Weeks

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HOOSICK INSTITUTE

Windsor Mill  
N. Adams, Massachusetts 01247

SOLAR RELATED COURSES

\*Arch and the Environment

Instructor: Ekstrom, R./ Green, K.  
(413) 664-6302

Credits: 2  
Duration: 2 Weeks, 10.0 hrs per week  
Contact Hours: 20

Topics Covered Extensively: Passive Solar Technology; Solar Law/Legislation

\*Energy from the Sun, Wind, and Water

Instructor: R.Ekstrom/ Knuth, R.  
(413) 664-6302

Credits: 3  
Duration: 2 Weeks, 10.0 hrs per week  
Contact Hours: 20

Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Elec'l Generation; Small Scale; Wind Power, Small Systems

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**Massachusetts**

**Solar Energy Research Institute**

**NORTHEAST INSTITUTE OF INDUSTRIAL TECHNOLOGY** (90060)  
41 Phillips St.  
Boston, Massachusetts 02114

**PROGRAMS AND CURRICULA**

**Installing Solar Water Heaters**  
Degree: Solar Water Systems  
Contact: Galvin, G. M.  
(617) 523-2813

**SOLAR RELATED COURSES**

**Installing Solar Water Heating**  
Instructor: Smith, Robert O./  
Lannon, E.  
(617) 523-2813  
Department: Air Conditioning,  
Refrigeration Tech.  
Program or Curriculum: Installing Solar Water  
Heaters  
Student Level: College Graduate  
Duration: 15 Weeks, 2.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Number of Times Taught: 4  
Average Enrollment: 30

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**THE CAMBRIDGE SCHOOL - WESTON CNT.** (90200)  
**FOR OPEN EDU.**  
Weston, Massachusetts

**SOLAR RELATED COURSES**

**\*Adapting Heating Systems for Solar Use**  
(617) 965-5428

Topics Covered Extensively: Space  
Heating

**\*Adv. Studies in Solar Heating**  
(617) 965-5428  
Topics Covered Extensively: Space  
Heating

**\*Basic Solar Heating**  
(617) 965-5428  
Topics Covered Extensively: Space  
Heating

**\*Biomass for Energy**  
(617) 965-5428  
Topics Covered Extensively: Biomass  
Conversion

**\*Designing Your Own Solar System**  
(617) 965-5428  
Topics Covered Extensively: Solar System  
Components; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Space Heating

**\*Photovoltaics**  
(617) 965-5428  
Topics Covered Extensively:  
Photovoltaics

**\*Power from the Sea**  
(617) 965-5428

**\*Small Wind Mills**  
(617) 965-5428  
Topics Covered Extensively: Wind Power,  
Small Systems

**\*Solar Heating Added to Your House**  
(617) 965-5420

**\*Solar Heating System Design**  
(617) 965-5428  
Topics Covered Extensively: Solar System  
Components; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Domestic Hot Water; Space  
Heating

**\*Wind Machines**  
(617) 965-5420  
Topics Covered Extensively: Wind Power,  
Central Systems; Wind Power, Small  
Systems

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1978-79 National Solar Energy Education Directory

Michigan

**Colleges/Universities**

**CENTRAL MICH UNIVERSITY**  
MOUNT PLEASANT, Michigan 48858  
(517) 774-3151

**SOLAR RELATED COURSES**

*Energy Efficient Design and Cons.*

Instructor: Ecker, Louis G./ Nee,  
John  
(517) 774-3996  
Course Number: 697  
Department: Industrial  
Education/Technology  
Credits: 3  
Student Level: Junior or Senior  
Duration: 6 Weeks, 13.0 hrs per week  
Contact Hours: 80  
Classroom: 60  
Laboratory: 20

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Storage;  
Heat and Energy Transfer; Intro. to  
Solar Energy; Passive Solar Technology;  
Solar Economics; Solar Home  
Construction; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Installation;  
Domestic Hot Water; Swimming Pool  
Heating; Space Heating; Space Cooling  
Number of Times Taught: 1  
Average Enrollment: 30

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**DETROIT, UNIVERSITY OF**  
DETROIT, Michigan 48221  
(313) 927-1000

**SOLAR RELATED COURSES**

*Energy & Architecture*

Instructor: LaGrassa, Stephen  
(313) 927-1532  
Course Number: ART 514  
Department: Architecture  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Number of Times Taught: 1  
Average Enrollment: 15

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**EASTERN MICH UNIVERSITY**  
YPSILANTI, Michigan 48197  
(313) 487-1849

**SOLAR RELATED COURSES**

*Solar Energy in Construction*

Instructor: Kicklighter, Clois E.  
(313) 487-4330  
Course Number: 539

**Department:**

Industrial  
Technology/Industrial  
Education  
Credits: 2  
Student Level: College Graduate  
Duration: 2 Weeks, 15.0 hrs per week  
Contact Hours: 30  
Classroom: 20  
Laboratory: 10  
Topics Covered Extensively: Energy  
Conservation; Energy Conversion; Energy  
Storage; Heat and Energy Transfer;  
Intro. to Solar Energy; Materials  
Research; Solar System Components;  
Solar Home Construction; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Solar Systems  
Installation; Solar Systems Testing and  
Evaluation; Domestic Hot Water  
Number of Times Taught: 1  
Average Enrollment: 16

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**FERRIS STATE COLLEGE**  
(2260)  
BIG RAPIDS, Michigan 49307  
(616) 796-9971

**PROGRAMS AND CURRICULA**

*Refrig., Heating and Air Conditioning  
Technology*

Degree: AD, Applied Science in  
Refrig., Heating, and Air  
Conditioning  
Contact: Shane, James B.  
(616) 796-9971  
Students Taking or Completing Offering:  
Installer-Commercial (Solar System),  
Installer-Residential (Solar System),  
Solar Technician, Trade Specialty

**SOLAR RELATED COURSES**

*Advanced Air Conditioning*

Instructor: Mott, Joe  
(616) 796-9971  
Course Number: RHA 263  
Department: Construction  
Program or  
Curriculum: Refrig., Heating and  
Air Conditioning  
Technology  
Credits: 9  
Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 20.0 hrs per week  
Contact Hours: 200  
Classroom: 50  
Laboratory: 150  
Average Enrollment: 18

*Energy Conservation in Building Design*

Instructor: Kantor, Mel  
(616) 796-9971  
Course Number: A-0 302  
Department: Construction  
Program or  
Curriculum: Refrig., Heating and  
Air Conditioning

Credits: 3  
 Student Level: All levels.  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Classroom: 30  
 Topics Covered Extensively: Energy Conservation; Passive Solar Technology; Solar Home Construction; Space Heating

**Energy Use and Conservation**

Instructor: Erion, John  
 (616) 796-9971  
 Course Number: BCT 302  
 Department: Construction  
 Program or Curriculum: Refrig., Heating and Air Conditioning Technology  
 Credits: 4  
 Student Level: All levels  
 Duration: 10 Weeks, 5.0 hrs per week  
 Contact Hours: 50  
 Classroom: 30  
 Laboratory: 20  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Passive Solar Technology; Solar System Components; Solar Economics; Solar Systems Installation; Domestic Hot Water; Space Heating

**\* Heating**

Instructor: Stevens, Russ  
 (616) 796-9971  
 Course Number: RHA 262  
 Department: Construction  
 Program or Curriculum: Refrig., Heating, and Air Conditioning Technology  
 Credits: 9  
 Student Level: Freshman or Sophomore  
 Duration: 10 Weeks, 20.0 hrs per week  
 Contact Hours: 200  
 Classroom: 50  
 Laboratory: 150  
 Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Systems Maintenance; Space Heating  
 Average Enrollment: 18

**Summer Air Conditioning**

Instructor: Lawrence, Fred/ Shaw, Dick  
 (616) 796-9971  
 Course Number: RHA 261  
 Department: Construction  
 Program or Curriculum: Refrig., Heating and Air Conditioning Technology  
 Credits: 9  
 Student Level: Freshman or Sophomore  
 Duration: 10 Weeks, 20.0 hrs per week

Contact Hours: 200  
 Classroom: 50  
 Laboratory: 150  
 Topics Covered Extensively: Plumbing Techniques; Solar System Components; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
 Average Enrollment: 18

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**GENERAL MOTORS INSTITUTE**

(2262)

FLINT, Michigan 48502  
 (313) 766-2353

**PROGRAMS AND CURRICULA**

**Solar Energy**  
 Degree: Continuing Engineering Education Certificate  
 Contact: Brink, Michael  
 (313) 776-9881  
 Students Taking or Completing Offering:  
 Architect, Educator, Researcher, Solar Engineer, Other

**SOLAR RELATED COURSES**

**Solar Energy**  
 Instructor: Brink, Michael  
 (313) 766-9881  
 Course Number: E150310  
 Department: Mechanical Engineering  
 Program or Curriculum: Solar Energy  
 Student Level: College Graduate  
 Duration: 1 Weeks, 24.0 hrs per week  
 Contact Hours: 24  
 Classroom: 21  
 Laboratory: 3  
 Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Process Heat, Industrial; Wind Power, Small Systems; Space Cooling  
 Number of Times Taught: 1  
 Average Enrollment: 10

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**GRAND VALLEY ST COLLEGES**

(2268)

ALLENDALE, Michigan 49401  
 (616) 895-6611

**PROGRAMS AND CURRICULA**

**Alt. Ener. Emph. - Urban, Environ. Studs.**  
 Degree: BS, Urban, Envi. Studies-Alt.Ener.  
 Contact: Bailey, Rod  
 (616) 895-6611  
 Students Taking or Completing Offering:

**Educator, Do-it-yourself Homeowner,  
Solar Technician**

**SOLAR RELATED COURSES**

**Alternative Energy Systems**

Instructor: Bailey, Rod  
 Course Number: 1579  
 Department: William James College  
 Program or Curriculum: Alt. Ener. Emph.-Urban, Environ. Studs.  
 Credits: 5  
 Student Level: All levels  
 Duration: 10 Weeks, 5.0 hrs per week  
 Contact Hours: 50  
 Classroom: 50  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Intro. to Solar Energy; Passive Solar Technology; Domestic Hot Water; Space Heating  
 Number of Times Taught: 4  
 Average Enrollment: 40

**Solar Energy System Design**

Instructor: Bailey, Rod  
 Course Number: 1734  
 Department: William James College  
 Program or Curriculum: Alt. Ener. Emph.-Urban, Environ. Studs.  
 Student Level: All levels  
 Duration: 10 Weeks, 5.0 hrs per week  
 Contact Hours: 50  
 Classroom: 25  
 Laboratory: 25  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Space Heating  
 Number of Times Taught: 3  
 Average Enrollment: 50

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**JORDAN COLLEGE**

(29091)

CEDAR SPRINGS, Michigan 49319  
 (616) 696-1180

**PROGRAMS AND CURRICULA**

**Energy and Environmental Studies**

Degree: BS, Alternate and Environmental Studies  
 Contact: Till, Gordon Vander  
 (616) 696-1180

Students Taking or Completing Offering:  
 Educator, Researcher, Solar Technician

**SOLAR RELATED COURSES**

**Bio-Gas**

Instructor: Martin, Alan O.  
 Course Number: 240  
 Department: Energy Division  
 Program or Curriculum: Energy & Environmental Studies  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conservation; Energy Conversion  
 Number of Times Taught: 1  
 Average Enrollment: 20

**Geo-Thermal and other Geological Alternatives**

Instructor: Tyler, John  
 Course Number: 220  
 Department: Energy Division  
 Program or Curriculum: Energy & Environmental Studies  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Alternate Energy Sources

**Hydro-electricity**

Instructor: Gates, Timothy  
 Course Number: 220  
 Department: Energy Division  
 Program or Curriculum: Energy & Environmental Studies  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology  
 Number of Times Taught: 3  
 Average Enrollment: 25

**Solar I**

Instructor: Gates, Timothy  
 Course Number: 200  
 Department: Energy Division  
 Program or Curriculum: Energy and Environmental Studies  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Solar System Components; Solar Economics; Solar Collector

Evaluation/Design; Solar Systems  
 Design; Solar Systems Installation;  
 Solar Systems Maintenance; Domestic Hot  
 Water; Space Heating  
 Number of Times Taught: 8  
 Average Enrollment: 50

**Wind Energy Conversion Systems**

Instructor: Bregg, Gary  
 (616) 696-1180  
 Course Number: 210  
 Department: Energy Division  
 Program or Curriculum: Energy and Environmental Studies  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Materials Research; Wind Power, Small Systems  
 Number of Times Taught: 3  
 Average Enrollment: 20

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**LAURENCE INST TECHNOLOGY** (2279)  
 SOUTHFIELD, Michigan 48075  
 (313) 356-0200

**SOLAR RELATED COURSES**

**Natural Energy Sources**  
 Department: Architecture  
 Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Wind Power, Small Systems

**Solar Energy**  
 Department: Architecture  
 Student Level: Junior or Senior  
 Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Solar Economics; Solar Collector Evaluation Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling

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**MICHIGAN STATE UNIVERSITY** (2290)  
 EAST LANSING, Michigan 48824  
 (517) 355-1855

**SOLAR RELATED COURSES**

**Development of Solar Energy Designs**  
 Instructor: Zarp, H. R.  
 (517) 355-5230  
 Course Number: EGR 480  
 Department: Electrical Engineering  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 4.0 hrs per week

Contact Hours: 40  
 Classroom: 40  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Marketing/Market Analysis; Passive Solar Technology; Photovoltaics; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Wind Power, Central Systems; Wind Power, Small Systems  
 Number of Times Taught: 2  
 Average Enrollment: 30

**Direct Energy Conversion**

Instructor: Kerber, R.  
 (517) 353-9492  
 Course Number: ME 414  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Classroom: 30  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Photovoltaics; Elec'l Generation, Small Scale  
 Number of Times Taught: 5  
 Average Enrollment: 30

**Solar Energy Conversion**

Instructor: Dhanak, A. M.  
 (517) 355-5160  
 Course Number: ME 490  
 Department: Mechanical Engineering  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 4.0 hrs per week  
 Contact Hours: 40  
 Classroom: 40  
 Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Domestic Hot Water; Space Heating; Space Cooling  
 Number of Times Taught: 1  
 Average Enrollment: 50

**Technology and Utilization of Energy**

Instructor: Dhanak, A. M.  
 (517) 355-5160  
 Course Number: ME 300  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Classroom: 30  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conversion  
 Number of Times Taught: 7  
 Average Enrollment: 60

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MICHIGAN TECHNOLOGICAL U  
HOUGHTON, Michigan 49931  
(906) 487-1665

(2292)

**SOLAR RELATED COURSES***Environmental Control Engineering*

Instructor: Frea, Ward  
(906) 487-2567  
Course Number: ME437  
Department: Mach.  
Engineering-Engineering  
Mach.  
Credits: 3  
Student Level: Junior or Senior  
Duration: 12 Weeks, 3.0 hrs per week  
Contact Hours: 36  
Classroom: 36  
Average Enrollment: 15

*Forest Syncology*

Instructor: Coffman, M.S.  
(906) 487-2339  
Course Number: FP510  
Department: Forestry  
Credits: 4  
Student Level: College Graduate  
Duration: 12 Weeks, 4.0 hrs per week  
Contact Hours: 48  
Classroom: 36  
Laboratory: 12  
Average Enrollment: 10

*Heat Transfer*

Instructor: Frea, Ward  
(906) 487-2567  
Course Number: ME328  
Department: Mach.  
Engineering-Engineering  
Mach.  
Credits: 4  
Student Level: Junior or Senior  
Duration: 12 Weeks, 4.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Heat and  
Energy Transfer  
Average Enrollment: 75

*Radiative Heat Transfer*

Instructor: Frea, Ward  
(906) 487-2567  
Course Number: ME507  
Department: Mach.  
Engineering-Engineering  
Mach.  
Credits: 3  
Student Level: College Graduate  
Duration: 12 Weeks, 3.0 hrs per week  
Contact Hours: 36  
Classroom: 36  
Topics Covered Extensively: Heat and  
Energy Transfer

*Special Topics in Elect. Engrg.*

Instructor: Schwartz, P.F.  
(906) 487-2530

Course Number: EE490  
Department: Electrical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Topics Covered Extensively: Alternate  
Energy Sources; Energy Conversion;  
Intro. to Solar Energy; Materials  
Research; Photovoltaics  
Number of Times Taught: 1  
Average Enrollment: 27

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MICHIGAN- ANN ARBOR, U (9092)  
ANN ARBOR, Michigan 48109  
(313) 764-1817

**SOLAR RELATED COURSES***Applied Energy Conversion*

Instructor: Pearson, J. R.  
(313) 764-8464  
Course Number: 437  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Number of Times Taught: 8  
Average Enrollment: 15

*Direct Energy Conversion*

Instructor: Pearson, J. R.  
(313) 764-8464  
Course Number: 436  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Number of Times Taught: 8  
Average Enrollment: 15

*Energy Conservation Seminar I*

Instructor: Overdick, Willard A.  
(313) 764-9453  
Course Number: 555  
Department: Architecture and Urban  
Planning  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Number of Times Taught: 4  
Average Enrollment: 15

*Instrum. for Sol. Ener. Measurements*

Instructor: Fortman, Donald J.  
(313) 763-4380  
Course Number: 466  
Department: Atmospheric and Oceanic  
Science  
Credits: 3  
Student Level: Junior or Senior

**Michigan****Solar Energy Research Institute**

**Duration:** 15 Weeks, 5.0 hrs per week  
**Contact Hours:** 75  
**Classroom:** 45  
**Laboratory:** 30  
**Number of Times Taught:** 1  
**Average Enrollment:** 10

**Solar Energy Fundamentals**

**Instructor:** Clark, John  
 (313) 763-1046  
**Course Number:** 475  
**Department:** Mechanical Engineering  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45  
**Number of Times Taught:** 6  
**Average Enrollment:** 10

**Solar Energy Systems Design**

**Instructor:** Clark, John  
 (313) 763-1046  
**Course Number:** 575  
**Department:** Mechanical Engineering  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45  
**Number of Times Taught:** 4  
**Average Enrollment:** 8

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MICHIGAN- DEARBORN, U OF  
 DEARBORN, Michigan 48128  
 (313) 271-2300

(2326)

**SOLAR RELATED COURSES**

**Alternate Energy Sources**  
**Instructor:** Friedman, Peter  
**Course Number:** 295  
**Department:** Natural Sciences  
**Credits:** 3  
**Student Level:** All levels  
**Duration:** 16 Weeks, 3.0 hrs per week  
**Contact Hours:** 128  
**Classroom:** 128  
**Topics Covered Extensively:** Alternate Energy Sources; Energy Conversion; Energy Storage; Photovoltaics  
**Number of Times Taught:** 1  
**Average Enrollment:** 50

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MICHIGAN- FLINT, U OF  
 FLINT, Michigan 48503  
 (313) 762-3000

(2327)

**SOLAR RELATED COURSES**

**Energy Planning and Technology**  
**Instructor:** Rycus, M.  
 (313) 762-3355  
**Course Number:** ENV 250

**Department:** Environmental Studies  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 14 Weeks, 3.0 hrs per week  
**Contact Hours:** 42  
**Classroom:** 42  
**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy  
**Number of Times Taught:** 1  
**Average Enrollment:** 25

**Energy, Man and the Environment**

**Instructor:** Rycus, M.  
 (313) 762-3355  
**Course Number:** ENV 105  
**Department:** Environmental Studies  
**Credits:** 3  
**Student Level:** Freshman or Sophomore  
**Duration:** 14 Weeks, 3.0 hrs per week  
**Contact Hours:** 42  
**Classroom:** 42  
**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Domestic Hot Water  
**Number of Times Taught:** 4  
**Average Enrollment:** 30

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NORTHERN MICH UNIVERSITY  
 MARQUETTE, Michigan 49855  
 (906) 227-1000

(2301)

**SOLAR RELATED COURSES**

**Energy and Chemistry**  
**Instructor:** Allenstein, R.V.  
 (906) 226-3204  
**Course Number:** CH 105  
**Department:** Chemistry  
**Credits:** 4  
**Student Level:** Freshman or Sophomore  
**Duration:** 16 Weeks, 5.0 hrs per week  
**Contact Hours:** 60  
**Classroom:** 48  
**Laboratory:** 32  
**Topics Covered Extensively:** Energy Conversion; Heat and Energy Transfer  
**Number of Times Taught:** 5  
**Average Enrollment:** 35

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**OAKLAND UNIVERSITY**  
ROCHESTER, Michigan 48063  
(313) 377-2100

**SOLAR RELATED COURSES****Energy**

Instructor: Tpley, N.  
(313) 377-3410  
Course Number: PHY 115  
Department: Physics  
Credits: 4  
Student Level: All levels  
Duration: 14 Weeks, 4.0 hrs per week  
Contact Hours: 56  
Classroom: 56  
Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Elec'l Generation, Central; Wind Power, Central Systems

**Energy and the Environment**

Instructor: Miller, Steven R.  
(313) 377-2334  
Course Number: ENV 312  
Department: Environmental Science  
Credits: 4  
Student Level: All levels  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 60  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion  
Number of Times Taught: 2  
Average Enrollment: 39

**Problems in Energy and Environment**

Instructor: Miller, Steven R.  
(313) 377-2334  
Course Number: ENV 353  
Department: Environmental Science  
Credits: 4  
Student Level: Junior or Senior  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 50  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Heat/and Energy Transfer; Intro. to Solar Energy; Solar Economics; Elec'l Generation, Central; Elec'l Generation, Small Scale  
Number of Times Taught: 2  
Average Enrollment: 6

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(2307)

**SAGINAW VLY STATE COLLEGE**  
UNIVERSITY CENTER, Michigan 48710  
(517) 793-9800

**SOLAR RELATED COURSES****Solar Energy Systems**

Instructor: Ford, Frank E.  
Course Number: 431  
Department: Engineering & Technology  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 24

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(2314)

**WAYNE STATE UNIVERSITY**  
DETROIT, Michigan 48202  
(313) 577-2424

**SOLAR RELATED COURSES****Energy in the Environment**

Instructor: Thomas, R.L.  
(313) 577-2970  
Course Number: 0106  
Department: Physics and Astronomy  
Credits: 3  
Student Level: All levels  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy  
Number of Times Taught: 4  
Average Enrollment: 16

**Energy, Technology and Society**

Course Number: GST 2202  
Department: Lifelong Learning-Univ. Studies/Weekend Coll. Prog.  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 11 Weeks, 4.0 hrs per week  
Contact Hours: 44  
Classroom: 11  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation  
Number of Times Taught: 5  
Average Enrollment: 600

(2329)

**Program in Environ. Studies 502**

Instructor: Saperstein, A.M.  
 Course Number: ENV 502  
 Department: I.E., Physics, Pol. Sci.  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 30 Weeks, 4.0 hrs per week  
 Contact Hours: 120  
 Number of Times Taught: 3  
 Average Enrollment: 10

**Program in Environ. Studies 503**

Instructor: Saperstein, A.M.  
 Course Number: ENV 503  
 Department: I.E., Physics, Pol. Sci.  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 30 Weeks, 4.0 hrs per week  
 Contact Hours: 120  
 Number of Times Taught: 3  
 Average Enrollment: 10

**Program in Environmental Studies**

Instructor: Saperstein, A.M.  
 Course Number: ENV 501  
 Department: I.E., Physics, Pol. Sci.  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 30 Weeks, 4.0 hrs per week  
 Contact Hours: 120  
 Number of Times Taught: 3  
 Average Enrollment: 10

**Residential Solar Energy**

Instructor: Bowen, David R.  
 Course Number: GST 2203  
 Department: Lifelong Learning,  
 Univ. Studies/Weekend Coll. Prog  
 Credits: 4  
 Student Level: Freshman or Sophomore  
 Duration: 1 Weeks, 34.0 hrs per week  
 Contact Hours: 34  
 Classroom: 34  
 Topics Covered Extensively: Alternate Energy Sources; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 600

**Senior Seminar**

Instructor: Majeske, Penelope K.  
 Course Number: 4986  
 Department: Upper Division  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 11 Weeks, 4.0 hrs per week  
 Contact Hours: 44  
 Number of Times Taught: 3

Average Enrollment: 7

**Senior Seminar 4986**

Instructor: Majeske, Penelope K.  
 (313) 577-4644  
 Course Number: 4986  
 Department: Upper Division  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 11 Weeks, 4.0 hrs per week  
 Contact Hours: 44  
 Number of Times Taught: 3  
 Average Enrollment: 7

**Solar Energy Heat Transfer Processes**

Instructor: Singh, Trilochan  
 (313) 577-3845  
 Course Number: MEO527  
 Department: Mechanical Engineering  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 4.0 hrs per week  
 Contact Hours: 40  
 Classroom: 40  
 Number of Times Taught: 6  
 Average Enrollment: 15

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**WESTERN MICH UNIVERSITY**  
 KALAMAZOO, Michigan 49008  
 (616) 383-1600

(2330)

**SOLAR RELATED COURSES****Solar Energy II**

Instructor: Schubert, R.C.  
 Course Number: 495  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 3 Weeks, 15.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 15

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**Community/Junior Colleges**

**CHAS S MOTT CHTY COLLEGE**  
FLINT, Michigan 48503  
(313) 762-0200

(2261)

**PROGRAMS AND CURRICULA****Energy Technology**

Degree: AD, Applied Science, Alternate  
Energy  
Contact: Laine, Douglas E.  
(313) 762-0278  
Students Taking or Completing Offering:  
Trade Specialty

**SOLAR RELATED COURSES****Solar Heating and Cooling**

Instructor: Laine, Douglas E.  
(616) 762-0278  
Course Number: PHYSCI-113  
Department: Science and Mathematics  
Program or Curriculum: Energy Technology  
Credits: 2  
Student Level: All levels  
Duration: 16 Weeks, 2.0 hrs per week  
Contact Hours: 32  
Classroom: 32  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation  
Number of Times Taught: 2  
Average Enrollment: 20

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**DELTA COLLEGE** (2251)  
UNIVERSITY CENTER, Michigan 48710  
(517) 686-0400

**SOLAR RELATED COURSES**

**Solar Energy Workshop**  
Instructor: Host, C./ Schuitman,  
J./ Whittaker, M.  
(517) 662-9267  
Course Number: 78293  
Department: Science  
Credits: 1  
Student Level: All levels  
Duration: 5 Weeks, 3.0 hrs per week  
Contact Hours: 15  
Classroom: 9  
Laboratory: 6  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Space Heating  
Number of Times Taught: 5

Average Enrollment: 20

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**GLEN OAKS CHTY COLLEGE**  
CENTREVILLE, Michigan 49032  
(616) 467-9945

(2263)

**SOLAR RELATED COURSES**

**Alternative Energy**  
Instructor: Moss, Wayne  
(616) 467-9945  
Course Number: VAE-110  
Department: Vocational  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Number of Times Taught: 2

**Solar Energy**

Instructor: Moss, Wayne  
(616) 467-9945  
Course Number: VAE 112  
Department: Vocational  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Number of Times Taught: 1  
Average Enrollment: 30

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**GRAND RAPIDS JR COLLEGE** (2267)  
GRAND RAPIDS, Michigan 49502  
(616) 456-4895

**PROGRAMS AND CURRICULA**

**Arch. Draft.**  
Degree: AD, Arch. Draft.  
Contact: Boyer, Don  
Students Taking or Completing Offering:  
Architect

**Heat., Vent., A/C**

Degree: AD, Heat., Vent., A, C  
Contact: Boyer, Don

**SOLAR RELATED COURSES**

**Sol. Sys. - Collector Des...and Cons.**  
Instructor: Larson, L.  
(616) 456-4860  
Course Number: TE 245  
Department: Technology  
Program or Curriculum: Arch. & Draft. and Heat., Vent., A/C  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 4.0 hrs per week  
Contact Hours: 64  
Classroom: 16  
Laboratory: 32

**Topics Covered Extensively:** Materials Research; Plumbing Techniques; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating

**Solar Dwelling Design Concepts**

Instructor: Larson, L.  
(616) 456-4860  
Course Number: TE 243  
Department: Technology  
Program or:  
Curriculum: Arch. Draft. and Heat., Vent., A/C  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 4.0 hrs per week  
Contact Hours: 64  
Classroom: 32  
Laboratory: 32  
Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Storage; Passive Solar Technology; Solar Home Construction; Domestic Hot Water; Space Heating; Space Cooling

**Solar Theory & Design**

Instructor: Larson, L.  
(616) 456-4860  
Course Number: TE 142  
Department: Technology  
Program or:  
Curriculum: Arch. Draft. and Heat., Vent., A/C  
Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 2.0 hrs per week  
Contact Hours: 32  
Classroom: 28  
Laboratory: 4  
Topics Covered Extensively: Energy Conversion; Intro. to Solar Energy; Domestic Hot Water; Space Heating  
Number of Times Taught: 2  
Average Enrollment: 15

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JACKSON COMMUNITY COLLEGE  
JACKSON, Michigan 49201  
(517) 787-0300

(2274)

**SOLAR RELATED COURSES****Solar Heating and Cooling**

Instructor: Ed., Supplemental-Dean  
Occup. Ed.  
(517) 787-0800  
Course Number: ALT-010  
Department: Occupational  
Credits: 1  
Student Level: All levels  
Duration: 8 Weeks, 2.0 hrs per week  
Contact Hours: 16  
Classroom: 16  
Number of Times Taught: 2  
Average Enrollment: 45

LANSING COMMUNITY COLLEGE  
LANSING, Michigan 48901  
(517) 373-7400

(227B)

**SOLAR RELATED COURSES**

\***Alternate Sources of Energy**  
Course Number: ATG150  
Department: Eng'r Tech.  
Topics Covered Extensively: Alternate Energy Sources

**\*Building a Solar Furnace**

Course Number: ATG151  
Department: Eng'r Tech.  
Topics Covered Extensively: Space Heating

**\*Building a Solar Water Heater**

Course Number: ATG152  
Department: Eng'r Tech.  
Topics Covered Extensively: Domestic Hot Water

**\*Passive Solar Design**

Course Number: AT211  
Department: Eng'r Tech.  
Topics Covered Extensively: Passive Solar Technology

**\*Passive Solar II**

Course Number: AT215  
Department: Eng'r Tech.  
Topics Covered Extensively: Passive Solar Technology

**\*Principles of Solar Ener. Collection**

Course Number: AT201  
Department: Eng'r Technology  
Topics Covered Extensively: Solar System Components; Solar Collector Evaluation/Design

**\*Res. Solar Heating System Design**

Course Number: AT203  
Department: Eng'r Tech.  
Topics Covered Extensively: Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating

**\*Solar Housing**

Course Number: AT200  
Department: Eng'r Tech.

**\*Solar Site Seminar**

Course Number: AT208  
Department: Eng'r Tech.

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**MACOMB CO CC- SOUTH CAMPUS**  
WARREN, Michigan 48093  
(313) 779-7000

(8906)

**SOLAR RELATED COURSES****Solar Heating and Energy Conservation**

Instructor: Cooper, W. B.  
(313) 779-7465  
Course Number: CCT 280  
Department: Mechanical Tech.  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 8.0 hrs per week  
Contact Hours: 128  
Classroom: 64  
Laboratory: 64  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating  
Number of Times Taught: 4

Collector Evaluation/Design; Solar Systems Design; Solar Systems Maintenance; Domestic Hot Water  
Number of Times Taught: 4  
Average Enrollment: 20

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**SCHOOLCRAFT COLLEGE** (2315)  
LIVONIA, Michigan 48152  
(313) 591-6400

**SOLAR RELATED COURSES****Energy, Man and the Future**

Instructor: Lesko  
(313) 591-6400  
Course Number: 101  
Department: Physics  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 5.0 hrs per week  
Contact Hours: 80  
Classroom: 48  
Laboratory: 32  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Solar Economics  
Number of Times Taught: 8  
Average Enrollment: 20

**MID MICHIGAN CHTY COLLEGE**  
HARRISON, Michigan 48625  
(517) 386-7792

(6768)

**SOLAR RELATED COURSES****Alternate Energy Sources**

Instructor: Derscheid, Larry  
(517) 386-7792  
Course Number: 151  
Department: Physical Science  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Alternate Energy Sources  
Number of Times Taught: 3  
Average Enrollment: 10

**Here Comes the Sun**

Department: Bursar/Solar Energy  
Student Level: All levels  
Duration: 1 Weeks, 18.0 hrs per week  
Contact Hours: 18  
Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating

**Heating Systems**

Instructor: Hohman, John  
(517) 386-7792  
Course Number: HRA201  
Department: Technical  
Credits: 6  
Student Level: Junior or Senior  
Duration: 16 Weeks, 8.0 hrs per week  
Contact Hours: 128  
Classroom: 64  
Laboratory: 64  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Materials Research; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar

**SNT CLAIR CO CHTY COLLEGE**

FORT HURON, Michigan 48060  
(313) 984-3881

(2310)

**SOLAR RELATED COURSES****Alternate Energy, Intro. To Energy**

Instructor: Zochowski, Phil  
(313) 984-3881  
Course Number: 100  
Department: Industrial Technology  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 4.0 hrs per week  
Contact Hours: 64  
Classroom: 32  
Laboratory: 32

Michigan

Solar Energy Research Institute

Topics Covered Extensively: Alternate  
Energy Sources; Energy Conservation;  
Energy Conversion; Intro. to Solar  
Energy; Solar Home Construction; Wind  
Power; Small Systems  
Number of Times Taught: 1  
Average Enrollment: 15

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**SOUTHWESTERN MICH. COLLEGE**  
DOWAGIAC, Michigan 49047  
(616) 782-5113

(2317)

**SOLAR RELATED COURSES**

**Solar Energy**  
Instructor: Haidler, William  
(616) 782-5113  
Course Number: 181  
Department: Continuing Education  
Credits: 2  
Student Level: All levels  
Duration: 6 Weeks, 6.0 hrs per week  
Contact Hours: 36  
Classroom: 36  
Topics Covered Extensively: Intro. to  
Solar Energy; Solar System Components;  
Solar Collector Evaluation/Design;  
Solar Systems Design  
Number of Times Taught: 6  
Average Enrollment: 20

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**Other Educational Institutions**

**SUN STRUCTURES**  
201 E. Liberty St.  
Ann Arbor, Michigan

(90430)

**SOLAR RELATED COURSES**

**Alt. Energy Workshops**

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**Colleges/Universities**

**AUGSBURG COLLEGE** (2334)  
MINNEAPOLIS, Minnesota 55454  
(612) 332-5181

**SOLAR RELATED COURSES****Energy Options for the Future**

Instructor: Paulson Kermit E.  
(612) 332-5181  
Department: Physics  
Credits: 4  
Student Level: All levels  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Classroom: 39

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy;

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**BEMIDJI STATE U** (2336)  
BEMIDJI, Minnesota 56601  
(218) 755-2000

**SOLAR RELATED COURSES****Alternate Energy Sources**

Instructor: Strom, Irving  
(218) 755-2760  
Course Number: 370  
Department: Industrial Technology  
Credits: 2  
Student Level: All levels  
Duration: 10 Weeks, 2.0 hrs per week  
Contact Hours: 20  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation  
Number of Times Taught: 1  
Average Enrollment: 20

**Fireplace Construction**

Instructor: Anderson, Robert  
(218) 755-2950  
Course Number: 496  
Department: Ind. Tech.  
Credits: 1  
Student Level: All levels  
Duration: 1 Weeks, 20.0 hrs per week  
Contact Hours: 20  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Heat and Energy Transfer  
Number of Times Taught: 5  
Average Enrollment: 40

**Heat Pump Tech.**

Instructor: Larson, Irving  
(218) 755-2950  
Course Number: 43596  
Department: Ind. Tech.  
Credits: 1  
Student Level: All levels  
Duration: 1 Weeks, 10.0 hrs per week  
Contact Hours: 10  
Classroom: 10

Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer

**Solar Heating (Energy)**

Instructor: Larson, Irving  
(218) 755-2950  
Course Number: 4/596  
Department: Ind. Tech.  
Credits: 1  
Student Level: All levels  
Duration: 1 Weeks, 10.0 hrs per week  
Contact Hours: 10  
Classroom: 10

Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating

Number of Times Taught: 3  
Average Enrollment: 25

**Wind Generation (Energy)**

Instructor: Larson, Irving  
(218) 755-2950  
Department: Ind. Tech.  
Credits: 1  
Student Level: All levels  
Duration: 10 Weeks, 1.0 hrs per week  
Contact Hours: 10  
Classroom: 10  
Topics Covered Extensively: Energy Storage; Wind Power, Central Systems; Wind Power, Small Systems  
Number of Times Taught: 1  
Average Enrollment: 20

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**GUSTAVUS ADOLPHUS COLLEGE** (2353)  
SAINT PETER, Minnesota 56082  
(507) 931-4300

**SOLAR RELATED COURSES****Alternate Sources of Energy**

Instructor: Bradley, Wendell  
(507) 931-4300  
Course Number: 104B  
Department: Physics  
Credits: 1  
Student Level: All levels  
Duration: 7 Weeks, 4.0 hrs per week  
Contact Hours: 28  
Classroom: 10  
Laboratory: 18  
Topics Covered Extensively: Alternate Energy Sources  
Number of Times Taught: 5  
Average Enrollment: 18

**Energy**

Instructor: Bradley, Wendell  
(507) 931-4300

Course Number: 104A

Department: Physics

Credits: 1

Student Level: All levels

Duration: 7 Weeks, 4.0 hrs per week

Contact Hours: 28

Classroom: 28

Topics Covered Extensively: Alternate Energy Sources

Number of Times Taught: 5

Average Enrollment: 12

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**Indepen. Stud.-Sol. Ener. Res. Projects**

Instructor: Culler, Richard  
(507) 931-4300

Course Number: 191-491

Department: Physics

Credits: 1

Student Level: Junior or Senior

Duration: 14 Weeks, 5.0 hrs per week

Contact Hours: 70

Laboratory: 70

Topics Covered Extensively: Alternate Energy Sources

Number of Times Taught: 3

Average Enrollment: 3

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**MANKATO STATE UNIVERSITY** (2360)  
MANKATO, Minnesota 56001  
(507) 389-1111

**SOLAR RELATED COURSES**

**Energy and Management**

Instructor: Nordue, Dale  
(507) 389-6536

Course Number: 101

Department: Physics and Electronics  
Engineering Technology

Credits: 4

Student Level: All levels

Duration: 10 Weeks, 4.0 hrs per week

Contact Hours: 40

Classroom: 30

Laboratory: 10

Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Solar Systems Design

Number of Times Taught: 3

Average Enrollment: 6

**Residential Solar Energy**

Instructor: Johnson, Iver H.  
(507) 389-6621

Course Number: 491

Department: Industrial and Technical Studies

Credits: 3

Student Level: Junior or Senior

Duration: 12 Weeks, 3.0 hrs per week

Contact Hours: 36

Classroom: 36

Topics Covered Extensively: Energy Storage; Intro. to Solar Energy;

Passive Solar Technology; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating

Number of Times Taught: 1

Average Enrollment: 35

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**MINN MNPLS SNT PAUL, U OF**  
MINNEAPOLIS, Minnesota 55455  
(612) 373-2851

(43969)

**SOLAR RELATED COURSES**

**Solar Energy Utilization**

Instructor: Liu, Benjamin Y.H.

Course Number: ME 5712

Department: Mechanical Engineering

Credits: 4

Student Level: Junior or Senior

Duration: 10 Weeks, 4.0 hrs per week

Contact Hours: 40

Classroom: 40

Topics Covered Extensively: Alternate Energy Sources; Energy Storage; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Law/Legislation; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Process Heat, Industrial; Space Heating; Space Cooling

Number of Times Taught: 4

Average Enrollment: 45

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**MINNESOTA DULUTH, U OF** (2388)  
DULUTH, Minnesota 55812  
(218) 726-8000

**SOLAR RELATED COURSES**

**Energy Resources: Sources, Use and Conservation**

Instructor: Oakland, Lewis J.  
(218) 726-7210

Course Number: PHYS 1020

Department: Letters & Science-Physics

Credits: 4

Student Level: All levels

Duration: 10 Weeks, 4.0 hrs per week

Contact Hours: 40

Classroom: 30

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy

Number of Times Taught: 1

Average Enrollment: 35

**Environmental Studies**

Instructor: Sydor, Michael  
(218) 726-7205

Course Number: PHY 3050

Department: Letters & Science/Physics

Credits: 3  
 Student Level: Junior or Senior  
 Duration: 11 Weeks, 3.0 hrs per week  
 Contact Hours: 33  
 Classroom: 33  
 Topics Covered Extensively: Heat and Energy Transfer  
 Number of Times Taught: 1  
 Average Enrollment: 6

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MOORHEAD STATE UNIVERSITY (2367)  
 MOORHEAD, Minnesota 56560  
 (218) 236-2041

## SOLAR RELATED COURSES

*Solar Energy*  
 Instructor: Mathiason, Dennis  
 (218) 236-2136  
 Course Number: 403  
 Department: Chemistry  
 Credits: 4  
 Student Level: All levels  
 Duration: 10 Weeks, 4.0 hrs per week  
 Contact Hours: 40  
 Classroom: 40  
 Topics Covered Extensively: Energy Conservation; Energy Conversion; Heat and Energy Transfer; Solar System Components; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 40

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SAINT CLOUD ST. UNIVERSITY (2377)  
 SAINT CLOUD, Minnesota 56301  
 (612) 255-0121

## SOLAR RELATED COURSES

*Solar Energy*  
 Instructor: Trummel, Donald  
 (612) 255-2011  
 Course Number: 495/595  
 Department: Physics  
 Credits: 2  
 Student Level: All levels  
 Duration: 8 Weeks, 3.0 hrs per week  
 Contact Hours: 24  
 Classroom: 19  
 Laboratory: 5  
 Number of Times Taught: 2  
 Average Enrollment: 20

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SAINT OLAF COLLEGE (2382)  
 NORTHFIELD, Minnesota 55057  
 (507) 663-2222

## SOLAR RELATED COURSES

*\*Physic Dept. Courses*  
 Department: Physics

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SAINT TERESA COLLEGE OF WINONA, Minnesota 55987 (2344)  
 (507) 452-9302

## PROGRAMS AND CURRICULA

*Solar Energy Dynamics*  
 Degree: NO,  
 Contact: Homer, Oscar  
 (507) 454-2930  
 Students Taking or Completing Offering:  
 Educator

## SOLAR RELATED COURSES

*Solar Energy Dynamics*  
 Instructor: Homer, Oscar  
 Department: Biology-Chemistry  
 Program or Curriculum: Solar Energy Dynamics  
 Student Level: College Graduate  
 Duration: 3 Weeks, 40.0 hrs per week  
 Contact Hours: 120  
 Classroom: 60  
 Laboratory: 60

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WM MITCHELL COLLEGE LAW (2391)  
 SAINT PAUL, Minnesota 55105  
 (612) 227-9171

## SOLAR RELATED COURSES

*Energy Law & Policy*  
 Instructor: Prince, J. D.  
 (612) 227-9171  
 Course Number: 393  
 Department: College of Law  
 Credits: 2  
 Student Level: College Graduate  
 Duration: 16 Weeks, 2.0 hrs per week  
 Contact Hours: 32  
 Classroom: 32  
 Topics Covered Extensively: Solar Energy Policy Development; So Law/legislation

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## Community/Junior Colleges

**LAKEWOOD CHTY COLLEGE** (6774)  
WHITE BEAR LAKE, Minnesota 55110  
(612) 770-1331

**PROGRAMS AND CURRICULA**

**Energy Engineering Technology**  
Degree: AD, Applied Science-Energy  
Contact: Wischmann, Robert  
(612) 770-1331

**SOLAR RELATED COURSES****Energy Concepts**

Instructor: Wischmann, Robert  
(612) 770-1331  
Course Number: NS 138  
Department: Natural Science  
Program or Curriculum: Energy Engineering Technology  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40  
Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conservation; Intro. to Solar Energy; Passive Solar Technology  
Number of Times Taught: 9  
Average Enrollment: 30

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**ROCHESTER CHTY COLLEGE** (2373)  
ROCHESTER, Minnesota 55901  
(507) 285-7210

**SOLAR RELATED COURSES**

**Adv. Sol. Energy for the Homeowner**  
Department: Civil Engr. Technology  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 12 Weeks, 3.0 hrs per week  
Contact Hours: 36  
Classroom: 36

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**Colleges/Universities**

**DELTA STATE UNIVERSITY** (2403)  
 CLEVELAND, Mississippi 38732  
 (601) 846-6664

**PROGRAMS AND CURRICULA**

**Energy Program for High School Teachers**  
 Contact: Myers, Richard S.  
 (601) 843-9741

**Students Taking or Completing Offering:**  
 Educator

**SOLAR RELATED COURSES**

**Special Topics In Chemistry-Energy**  
 Instructor: Myers, Richard S.  
 (601) 843-9741  
 Course Number: CHE 392  
 Department: Physical Sciences  
 Program or Curriculum: Energy Program for High School Teachers  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 2 Weeks, 28.0 hrs per week  
 Contact Hours: 56  
 Classroom: 56  
 Topics Covered Extensively: Alternate Energy Sources; Intro. to Solar Energy  
 Number of Times Taught: 1  
 Average Enrollment: 24

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**MISSISSIPPI ST UNIVERSITY** (2423)  
 MISSISSIPPI STATE, Mississippi 39762  
 (601) 325-3221

**PROGRAMS AND CURRICULA**

**Mechanical Engineering**  
 Degree: PhD, MS, BS, Mechanical Engineering  
 Contact: Carley, C. T.  
 (601) 325-4915

**SOLAR RELATED COURSES**

**Solar Energy Thermal Processes**  
 Instructor: Forbes, Richard  
 (601) 325-4915  
 Course Number: ME 4313  
 Department: Mechanical Engineering  
 Program or Curriculum: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 42  
 Classroom: 40  
 Laboratory: 2  
 Topics Covered Extensively: Energy Conservation; Energy Storage; Heat and Energy Transfer; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar

**Systems Design; Domestic Hot Water;**

Space Heating; Space Cooling  
 Number of Times Taught: 3  
 Average Enrollment: 30

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**SOUTHERN MISSISSIPPI, U OF** (2441)  
 HATTIESBURG, Mississippi 39401  
 (601) 266-7101

**SOLAR RELATED COURSES**

**Solar Heating and Cooling**  
 Instructor: Brent, Charles R.  
 (601) 266-7212  
 Course Number: MET 444/544  
 Department: Sci. and Tech./Indus. Technology  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling  
 Number of Times Taught: 4  
 Average Enrollment: 18

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**Community/Junior Colleges**

**HINRS JUNIOR COLLEGE** (2407)  
 RAYMOND, Mississippi 39154  
 (601) 857-5261

**SOLAR RELATED COURSES**

**Solar Energy**  
 Instructor: Durham, J. David  
 (615) 857-5261  
 Course Number: CEU 0073  
 Department: Physical Science  
 Student Level: All levels  
 Duration: 16 Weeks, 2.0 hrs per week  
 Contact Hours: 12  
 Classroom: 12  
 Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 25

**Colleges/Universities**

**CENTRAL METHODIST COLLEGE**  
FAYETTE, Missouri 65248  
(816) 248-3391

(2453)

**SOLAR RELATED COURSES***Research Topics In Solar Energy*

Instructor: Peery, Larry J.  
(816) 248-3391  
Course Number: I43  
Department: Physics-Astronomy  
Credits: 3  
Student Level: All levels  
Duration: 3 Weeks, 20.0 hrs per week  
Contact Hours: 60  
Classroom: 15  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water  
Number of Times Taught: 1  
Average Enrollment: 12

**CENTRAL MO ST UNIVERSITY**

WARRENSBURG, Missouri 64093  
(816) 429-4111

(2454)

**SOLAR RELATED COURSES***Energy Conservation*

Instructor: Ulrich, Robert  
(816) 429-4626  
Course Number: SAFE 4040  
Department: Public Service  
Credits: 3  
Student Level: Junior or Senior  
Duration: 12 Weeks, 5.0 hrs per week  
Contact Hours: 60  
Classroom: 60  
Number of Times Taught: 10  
Average Enrollment: 14

*Solar & Other Energy Alternatives*

Instructor: Norris, Raymond  
(816) 429-4941  
Course Number: E/E 4000  
Department: Electricity & Electronics  
Credits: 2  
Student Level: Junior or Senior  
Duration: 3 Weeks, 12.0 hrs per week  
Contact Hours: 36  
Topics Covered Extensively: Alternate Energy Sources; Heat and Energy Transfer; Intro. to Solar Energy; Solar Economics; Space Heating; Space Cooling

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**MISSOURI ST MN ST COLLEGE**

JOPLIN, Missouri 64801  
(417) 624-8100

(2488)

**SOLAR RELATED COURSES***Seminar-Solar Energy Design*

Instructor: Morgan, Ronald  
(417) 624-8100  
Course Number: 498  
Department: Drafting & Design  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 5.0 hrs per week  
Contact Hours: 80  
Classroom: 16  
Laboratory: 64  
Topics Covered Extensively: Appropriate Technology; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design  
Number of Times Taught: 2  
Average Enrollment: 20

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**MISSOURI- COLUMBIA, U OF**

COLUMBIA, Missouri 65201  
(314) 882-2121

(2516)

**SOLAR RELATED COURSES***Ener. Systs., Res-Risks, Benefits*

Instructor: Meyer, Walter/ Bull, Stanley R.  
(314) 882-3550  
Course Number: NB301  
Department: Energy Systems and Resources  
Credits: 2  
Student Level: College Graduate  
Duration: 1 Weeks, 40.0 hrs per week  
Contact Hours: 40  
Classroom: 30  
Laboratory: 10  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy  
Number of Times Taught: 6  
Average Enrollment: 39

*Engin. Eval-Ener. Systs., Resources*

Instructor: Meyer, Walter  
(314) 882-3550  
Course Number: EENAEENE315  
Department: Energy Systems and Resources Program  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy

**Number of Times Taught:** 3  
**Average Enrollment:** 26

**Heat Ener. Crisis-Corp. Risks, Benefits**  
**Instructor:** Meyer, Walter/Bull,  
 Stanley R.

(314) 882-3550

**Course Number:** NE301**Department:** Energy Systems and  
Resources**Credits:** 4**Student Level:** College Graduate**Duration:** 3 Weeks, 40.0 hrs per week**Contact Hours:** 120

Classroom: 90

Laboratory: 30

**Topics Covered Extensively:** Energy  
Conservation; Intro. to Solar Energy**Number of Times Taught:** 1**Average Enrollment:** 37**Principles of Direct Energy Conversion**  
**Instructor:** Warden, Richard C.

(314) 882-3345

**Course Number:** MIE359**Department:** Mechanical & Aerospace  
Engineering**Credits:** 3**Student Level:** Junior or Senior**Duration:** 16 Weeks, 3.0 hrs per week**Contact Hours:** 48

Classroom: 48

**Topics Covered Extensively:** Energy  
Conversion; Photovoltaics**Number of Times Taught:** 2**Average Enrollment:** 20**Solar/Energy Utilization****Instructor:** Moore, Gordon L.  
 (314) 882-2785**Course Number:** MAE339**Department:** Mechanical & aerospace  
Engineering**Credits:** 3**Student Level:** Junior or Senior**Duration:** 16 Weeks, 3.0 hrs per week**Contact Hours:** 48

Classroom: 48

**Topics Covered Extensively:** Energy  
Conservation; Energy Storage; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Passive Solar Technology; Solar  
Home Construction; Domestic Hot Water;  
Space Heating; Space Cooling**Number of Times Taught:** 1**Average Enrollment:** 22**Teachers Energy Symposium****Instructor:** Meyer, W./Bull, S.R.  
 (314) 882-3550**Course Number:** NE301**Department:** Energy Systems and  
Resources**Credits:** 1**Student Level:** College Graduate**Duration:** 1 Weeks, 20.0 hrs per week**Contact Hours:** 20**Topics Covered Extensively:** Alternate  
Energy Sources; Energy Conservation;  
Intro. to Solar Energy**Number of Times Taught:** 3**Average Enrollment:** 70

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**MISSOURI- KANSAS CITY, U OF****(2518)****KANSAS CITY, Missouri 64110**

(1816) 276-1000

**SOLAR RELATED COURSES****Solar Energy Utilization****Instructor:** Stewart, Jr., W. E.  
 (1816) 276-1672**Course Number:** 301**Department:** Mechanical Engineering**Credits:** 3**Student Level:** Junior or Senior**Duration:** 16 Weeks, 3.0 hrs per week**Contact Hours:** 48**Topics Covered Extensively:** Appropriate  
Technology; Energy Conversion; Energy  
Storage; Heat and Energy Transfer;  
Materials Research; Passive Solar  
Technology; Solar Economics; Solar  
Collector Evaluation/Design; Solar  
Systems Design**Number of Times Taught:** 1**Average Enrollment:** 25

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**MISSOURI- ROLLA, U OF****(2517)****ROLLA, Missouri 65401**

(314) 341-4114

**PROGRAMS AND CURRICULA****Solar Energy Conversion****Degree:** MS, Electrical Engineering  
**Contact:** Boone, Jack L.  
 (314) 341-4357**SOLAR RELATED COURSES****Solar Energy Conversion****Instructor:** Boone, Jack L.  
 (314) 341-4357**Course Number:** EE335**Department:** Elec. Engineering**Program or****Curriculum:** Solar Energy Conversion**Credits:** 3**Student Level:** College Graduate**Duration:** 15 Weeks, 3.0 hrs per week**Contact Hours:** 45**Topics Covered Extensively:** Appropriate  
Technology; Energy Conversion; Energy  
Storage; Heat and Energy Transfer;  
Intro. to Solar Energy; Photovoltaics;  
Solar Collector Evaluation/Design;  
Solar Systems Design**Average Enrollment:** 10**Solar Energy Conversion-Lab****Instructor:** Boone, Jack L.  
 (314) 341-4357**Course Number:** EE 336

**Department:** Elec. Engin.  
**Program or Curriculum:** Solar Energy Conversion  
**Credits:** 1  
**Student Level:** College Graduate  
**Duration:** 15 Weeks, 1.0 hrs per week  
**Contact Hours:** 15  
**Topics Covered Extensively:** Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design; Domestic Hot Water; Space Heating  
**Average Enrollment:** 10

**Solar Heating and Cooling**

**Instructor:** Armaly, Bassam P.  
 (314) 341-4671  
**Course Number:** ME 365  
**Program or Curriculum:** Solar Energy Conversion  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45  
**Topics Covered Extensively:** Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
**Number of Times Taught:** 1  
**Average Enrollment:** 20

**MISSOURI- SAINT LOUIS, U.C.F.** (2519)  
 SAINT LOUIS, Missouri 63121  
 (314) 453-0111

**SOLAR RELATED COURSES**

\***Solar Heating and Cooling**  
**Department:** Mech. Engr.  
**Student Level:** College Graduate

**SOUTHEAST MO ST UNIVERSITY** (2501)  
 CAPE GIRARDEAU, Missouri 63701  
 (314) 334-8211

**SOLAR RELATED COURSES**

**Introduction to Solar Applications**  
**Instructor:** Freeman, Robert W.  
 (314) 651-2170  
**Department:** Physics  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 16 Weeks, 4.0 hrs per week  
**Contact Hours:** 64  
**Classroom:** 32  
**Laboratory:** 30  
**Topics Covered Extensively:** Energy

Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design; Domestic Hot Water; Space Heating

**SOUTHWESTERN MO ST UNIVERSITY**  
 SPRINGFIELD, Missouri 65802  
 (417) 836-5000

(25031)

**PROGRAMS AND CURRICULA****Engineering Physics-Solar Emphasis**

**Degree:** BS  
**Contact:** Banks, L.E.  
 (417) 836-5131  
**Students Taking or Completing Offering:**  
 Solar Engineer

**SOLAR RELATED COURSES****Basics of Solar Energy**

**Instructor:** Banks, L.E.  
 (417) 836-5131  
**Course Number:** 131  
**Department:** Physics  
**Program or Curriculum:** Engineering Physics-Solar Emphasis

**Credits:** 1  
**Student Level:** All levels  
**Duration:** 8 Weeks, 2.0 hrs per week

**Contact Hours:** 16  
**Classroom:** 16  
**Topics Covered Extensively:** Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design; Domestic Hot Water; Space Heating

**Number of Times Taught:** 2  
**Average Enrollment:** 40

**Solar Energy Laboratory**

**Instructor:** Banks, L.E.  
 (417) 836-5131  
**Course Number:** 141  
**Department:** Physics  
**Program or Curriculum:** Engineering Physics-Solar Emphasis

**Credits:** 1  
**Student Level:** All levels  
**Duration:** 16 Weeks, 2.0 hrs per week

**Contact Hours:** 32  
**Laboratory:** 32  
**Topics Covered Extensively:** Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Passive Solar Technology; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation

**Number of Times Taught:**

**Solar System Analysis**

**Instructor:** Banks, L.E.  
**Course Number:** 265  
**Department:** Physics  
**Program or Curriculum:** Engineering Physics - Solar Emphasis  
**Credits:** 2  
**Student Level:** Junior or Senior  
**Duration:** 16 Weeks, 2.0 hrs per week  
**Contact Hours:** 32  
**Classroom:** 32  
**Topics Covered Extensively:** Solar Economics; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Process Heat, Industrial

**Solar System Design**

**Instructor:** Banks, L.E.  
**Course Number:** 265  
**Department:** Physics  
**Program or Curriculum:** Engineering Physics-Solar Emphasis  
**Credits:** 1  
**Student Level:** Junior or Senior  
**Duration:** 16 Weeks, 2.0 hrs per week  
**Contact Hours:** 32  
**Laboratory:** 32  
**Topics Covered Extensively:** Passive Solar Technology; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design  
**Average Enrollment:** 14

**Solar Thermal Analysis**

**Instructor:** Banks, L.E.  
**Course Number:** 265  
**Department:** Physics  
**Program or Curriculum:** Engineering Physics-Solar Emphasis  
**Credits:** 2  
**Student Level:** Junior or Senior  
**Duration:** 16 Weeks, 2.0 hrs per week  
**Contact Hours:** 32  
**Classroom:** 32  
**Topics Covered Extensively:** Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Space Heating  
**Number of Times Taught:** 1  
**Average Enrollment:** 10

**Wind Energy**

**Instructor:** Northrip, J.W.  
**Course Number:** 131  
**Department:** Physics  
**Program or Curriculum:** Engineering Physics-Solar Emphasis  
**Credits:** 1  
**Student Level:** All levels  
**Duration:** 8 Weeks, 2.0 hrs per week  
**Contact Hours:** 16  
**Classroom:** 16

**Topics Covered Extensively: Wind Power,**

**Central Systems; Wind Power, Small Systems**  
**Number of Times Taught:** 1  
**Average Enrollment:** 40

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**WASHINGTON UNIVERSITY**  
**SAINT LOUIS, Missouri 63130**  
**(314) 889-5000**

(2520)

**SOLAR RELATED COURSES****Energy Effective Building Design**

**Instructor:** Associates, W. Tao and

(314) 644-1400

**Course Number:** 546  
**Department:** Architecture  
**Credits:** 2  
**Student Level:** College Graduate  
**Duration:** 14 Weeks, 2.0 hrs per week  
**Contact Hours:** 28  
**Classroom:** 28  
**Topics Covered Extensively:** Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics  
**Average Enrollment:** 14

**Solar Energy Technology and Policy**

**Instructor:** Icerman, Larry

(314) 889-5482

**Course Number:** THA 143  
**Department:** Technology and Human Affairs

**Credits:** 2  
**Student Level:** All levels  
**Duration:** 15 Weeks, 2.0 hrs per week  
**Contact Hours:** 30  
**Classroom:** 30  
**Topics Covered Extensively:** Intro. to Solar Energy; Passive Solar Technology; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Swimming Pool Heating; Space Heating  
**Number of Times Taught:** 2  
**Average Enrollment:** 70

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**WEBSTER COLLEGE**

**SAINT LOUIS, Missouri 63119**  
**(314) 968-0500**

(2521)

**SOLAR RELATED COURSES****Energy Appropriate to the Task**

**Instructor:** McConnell, Bill

(314) 968-0500

**Department:** Science  
**Credits:** 3  
**Student Level:** All levels  
**Duration:** 16 Weeks, 3.0 hrs per week  
**Contact Hours:** 48

Topics Covered Extensively: Energy Conservation; Passive Solar Technology  
 Number of Times Taught: 2  
 Average Enrollment: 10

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#### Community/Junior Colleges

CROWDER COLLEGE  
 NEOSHO, Missouri 64850  
 (417) 451-3223

(2459)

#### SOLAR RELATED COURSES

##### Basic Solar Design

Instructor: Boyt, Art  
 Department: Science  
 Credits: 3  
 Student Level: All levels  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Maintenance; Domestic Hot Water; Elec./Generation; Small Scale; Space Heating; Wind Power; Small Systems  
 Number of Times Taught: 4  
 Average Enrollment: 23

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SAINT LOUIS CC- MERAMEC  
 KIRKWOOD, Missouri 63122  
 (314) 966-7500

(2472)

#### SOLAR RELATED COURSES

##### Fund. of Solar Ener. and Ener. Cons.

Instructor: Strutman, Warren  
 Course Number: (314) 966-7747  
 Department: 12.906  
 Ener. and Tech.-Cont.  
 ED.  
 Student Level: High School Graduate  
 Duration: 6 Weeks, 2.0 hrs per week  
 Contact Hours: 16  
 Topics Covered Extensively: Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Solar Home Construction; Solar Collector Evaluation/Design; Domestic Hot Water; Space Heating; Space Cooling

**Colleges/Universities**

**MONTANA C MINE SCI- TECHN** (2531)  
 BUTTE, Montana 59701  
 (406) 792-8321

**SOLAR RELATED COURSES**

**Heat Transfer**  
 Instructor: Alexander, Richard  
 (406) 792-8321  
 Course Number: ES 526  
 Department: Engineering Science  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Heat and Energy Transfer

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**MONTANA STATE UNIVERSITY** (2532)  
 BOZEMAN, Montana 59715  
 (406) 994-4361

**SOLAR RELATED COURSES**

**Ener. Train. Shop-Second. Sci. Instructs.**  
 Instructor: Musselman, R. L.  
 (406) 994-2203  
 Course Number: 570  
 Department: Mechanical Engineering  
 Credits: 4  
 Student Level: College Graduate  
 Duration: 2 Weeks, 20.0 hrs per week  
 Contact Hours: 40  
 Classroom: 30  
 Laboratory: 10  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Domestic Hot Water; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 5

**Energy Course for Homebuilders**

Instructor: Martindale, W. R.  
 (406) 994-2203  
 Course Number: 570  
 Department: Mechanical Engineering  
 Student Level: All levels  
 Duration: 10 Weeks, 2.0 hrs per week  
 Contact Hours: 20  
 Classroom: 20  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Plumbing Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot

**Material Space Heating**  
 Number of Times Taught: 24  
 Average Enrollment: 65

**Energy Efficient Bldg. for Contractors**  
 Instructor: Warrington, Robert  
 (406) 994-2203

Department: Continuing Education  
 Student Level: All levels  
 Number of Times Taught: 2

**Energy: Limits, Problems and Prospects**  
 Instructor: Kirkpatrick, Larry  
 (406) 994-3614

Course Number: PHY 252  
 Department: Letters  
 Science/Physics  
 Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 12 Weeks, 3.0 hrs per week  
 Contact Hours: 36  
 Classroom: 36  
 Number of Times Taught: 5  
 Average Enrollment: 35

**Solar Energy Design**

Instructor: Warrington, Robert O.  
 (406) 994-2203  
 Course Number: ME 480  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48  
 Topics Covered Extensively: Heat and Energy Transfer; Passive Solar Technology; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 10

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**MONTANA, UNIVERSITY OF** (2536)  
 MISSOULA, Montana 59801  
 (406) 243-0211

**SOLAR RELATED COURSES**

**Alternative Energy & the Ecosphere**  
 Instructor: Sheridan, P.

(406) 243-2613  
 Course Number: 178-9  
 Department: Botany-Liberal Arts  
 Credits: 3  
 Student Level: All levels  
 Duration: 9 Weeks, 3.0 hrs per week  
 Contact Hours: 27  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Plumbing Techniques;

Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Wind Power; Central Systems; Wind Power, Small Systems  
Number of Times Taught: 3  
Average Enrollment: 200

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**WESTERN MONTANA COLLEGE**  
DILLON, Montana 59725  
(406) 683-7251

(2537)

**SOLAR RELATED COURSES**

*Solar Energy*  
Instructor: Stropper, Joseph B.  
(406) 683-7102  
Course Number: 2/3/491  
Department: Science  
Credits: 2  
Student Level: All levels  
Contact Hours: 30  
Classroom: 30  
Laboratory: 10  
Number of Times Taught: 1  
Average Enrollment: 22

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**Community/Junior Colleges**

**FLATHEAD VLY CMTY COLLEGE**  
KALISPELL, Montana 59901  
(406) 755-5222

(6777)

**SOLAR RELATED COURSES**

*Alternative Energy & Conservation*  
Instructor: Blood, Lex  
(406) 755-5222  
Course Number: 176  
Department: c  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 11 Weeks, 3.0 hrs per week  
Contact Hours: 33  
Classroom: 19  
Laboratory: 14  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Home Construction; Solar Law/Legislation;

**Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Elec'l Generation; Small Scale Process Heat; Agricultural; Space Heating; Wind Power; Central Systems; Wind Power; Small Systems**  
Number of Times Taught: 1  
Average Enrollment: 50

**Energy & Technological Society**

Instructor: Blood, Lex  
(406) 755-5222  
Course Number: 173  
Department: Earth Sciences, Geology  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 11 Weeks, 3.0 hrs per week  
Contact Hours: 33  
Classroom: 19  
Laboratory: 14  
Topics Covered Extensively: Energy Conservation  
Number of Times Taught: 2  
Average Enrollment: 25

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**Other Educational Institutions**

**ALTERNATIVE ENERGY RESOURCE ORG.** (90270)  
435 Stapleton Bldg.  
Billings, Montana 59101

**SOLAR RELATED COURSES**

*\*Solar Energy Workshop*  
Duration: 1 Weeks  
Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating

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**Colleges/Universities**

**HASTINGS COLLEGE**  
HASTINGS, Nebraska 68901  
(402) 463-2402

**SOLAR RELATED COURSES**

**Environmental Science 260**

Course Number: 260  
Department: Physics  
Credits: 4  
Student Level: Junior or Senior  
Duration: 14 Weeks, 5.0 hrs per week  
Contact Hours: 70  
Classroom: 56  
Laboratory: 14  
Number of Times Taught: 6  
Average Enrollment: 24

**Environmental Science 460**

Course Number: 460  
Department: Physics  
Credits: 4  
Student Level: Junior or Senior  
Duration: 14 Weeks, 5.0 hrs per week  
Contact Hours: 70  
Classroom: 56  
Laboratory: 14  
Number of Times Taught: 2  
Average Enrollment: 20

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**MIDLAND LUTHERAN COLLEGE**  
FREMONT, Nebraska 68025  
(402) 721-5480

**SOLAR RELATED COURSES**

**Solar Home Heating**

Instructor: Kruse, James  
(402) 721-5480  
Department: Continuing Ed.  
Student Level: All levels  
Duration: 7 Weeks, 3.0 hrs per week  
Contact Hours: 21  
Classroom: 21  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Home Construction; Solar Systems Design; Space Heating  
Number of Times Taught: 4  
Average Enrollment: 30

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**NEBRASKA LINCOLN, U OF**  
LINCOLN, Nebraska 68588  
(402) 472-7211

**SOLAR RELATED COURSES**

**Solar Energy Engineering**

Instructor: Anderson, Edward E.  
(402) 472-1678  
Course Number: 414/814

(2548)

(2553)

(2565)

**Department: Mechanical Engineering**

Credits: 3  
Student Level: Junior or Senior  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42  
Classroom: 42  
Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Process Heat; Agricultural; Process Heat, Industrial; Space Heating; Space Cooling  
Number of Times Taught: 3  
Average Enrollment: 20

**Summer Instit. and Curr. Dev.-Ener. Edu.**

Instructor: McCurdy, Donald W.  
(402) 472-3155

Course Number: 9935  
Department: Teachers College-Sec. Educ.

Credits: 3  
Student Level: College Graduate  
Duration: 3 Weeks, 30.0 hrs per week  
Contact Hours: 90  
Classroom: 30  
Laboratory: 60  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar Home Construction; Elec'l Generation, Central; Space Heating  
Number of Times Taught: 2  
Average Enrollment: 30

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**Community/Junior Colleges**

**CENTRAL TECH CITY COLLEGE**  
GRAND ISLAND, Nebraska 68801  
(308) 364-5220

**SOLAR RELATED COURSES**

**Solar Energy Fundamentals**

Instructor: Krueger, Alan  
(402) 463-6811  
Course Number: 330.54  
Department: Ref/Heating  
Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Laboratory: 40  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design

Number of Times Taught: 46

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**METROPOLITAN TECHNICAL CC**OMAHA, Nebraska 68137  
(402) 457-5100**PROGRAMS AND CURRICULA****Solar Technical Training Program**Degree: Solar Systems  
Contact: Kafka, James J.  
(402) 457-5100**Students Taking or Completing Offering:**  
Solar Technician**SOLAR RELATED COURSES****Survey of Solar Energy**

Instructor: Reinmuth, Larry  
(402) 457-5100  
Department: Continuing Education  
Program:  
Curriculum: Solar Technician Training Program  
Student Level: All levels  
Duration: 8 Weeks, 2.5 hrs per week  
Contact Hours: 20  
Classroom: 12  
Laboratory: 8

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling; Wind Power, Small Systems

Number of Times Taught: 3  
Average Enrollment: 8

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**MID PLAINS CC - N PLATTE**NORTH PLATTE, Nebraska 69101  
(308) 532-8740**SOLAR RELATED COURSES**

\***Solar Heat. Instruction - Familiarization**  
Department: Bldg & Construc. / Ref. & Air Cond.

Topics Covered Extensively: Intro. to Solar Energy

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(112586)

**SOUTHEAST CC MILFORD CAH**MILFORD, Nebraska 68405  
(402) 761-2131

(4723)

**SOLAR RELATED COURSES****Heat. and A/C System Theory**

Instructor: Lundgren, Stan  
Course Number: 5700227  
Department: Construction Occupations  
Credits: 2  
Student Level: All levels  
Duration: 6 Weeks, 5.0 hrs per week  
Contact Hours: 32  
Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy

**Residential A/C Theory I**

Instructor: Lundgren, S.  
Course Number: 4400441  
Department: Construction Occupations  
Credits: 3  
Student Level: All levels  
Duration: 11 Weeks, 5.0 hrs per week  
Contact Hours: 54  
Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy

**Solar Energy**

Instructor: Roll, Dean  
Course Number: 5700253  
Department: Architectural Technology  
Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 7 Weeks, 5.0 hrs per week  
Contact Hours: 32  
Classroom: 32  
Topics Covered Extensively: Energy Storage; Plumbing Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Space Heating  
Number of Times Taught: 4  
Average Enrollment: 15

**Solar Energy 4400653**

Instructor: Roll, Dean  
Course Number: 4400653  
Department: Construction  
Credits: 2  
Student Level: All levels  
Duration: 6 Weeks, 5.0 hrs per week  
Contact Hours: 32  
Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling

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**Nevada****Solar Energy Research Institute****Colleges/Universities**

**NEVADA LAS VEGAS, U OF**  
LAS VEGAS, Nevada 89154  
(702) 739-3011

(2569)

**PROGRAMS AND CURRICULA****Solar Systems**

Contact: Tryon, John G.  
(702) 739-3701

Students Taking or Completing Offering:  
Contractor, Installer-Residential  
(Solar System), Installer-Commercial  
(Solar System), Solar Technician,  
Heating, Ventilation, and Air Cond.  
Worker

**SOLAR RELATED COURSES****Solar Heating**

Instructor: Tryon, John G.  
(702) 739-3701  
Course Number: EGG475X  
Department: Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Intro. to  
Solar Energy; Solar System Components;  
Solar Economics; Solar Collector'  
Evaluation/Design; Solar Systems  
Design; Solar Systems Installation;  
Domestic Hot Water; Swimming Pool  
Heating; Space Heating; Space Cooling  
Number of Times Taught: 1  
Average Enrollment: 10

**Solar Systems-Domestic Hot Water**

Instructor: Tryon, John G.  
(702) 739-3701  
Department: Cont. Ed., Nev. Sol.  
Ener. Assoc.  
Program or  
Curriculum: Solar Systems  
Student Level: All levels  
Duration: 5 Weeks, 3.0 hrs per week  
Contact Hours: 16  
Classroom: 13  
Topics Covered Extensively: Solar System  
Components; Solar Economics; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Solar Systems  
Installation; Domestic Hot Water  
Number of Times Taught: 1  
Average Enrollment: 20

**Solar Systems-Economics**

Instructor: Tryon, John G.  
(702) 739-3701  
Department: Cont. Ed., Nev. Sol.  
Ener. Assoc.  
Program or  
Curriculum: Solar Systems  
Student Level: All levels  
Duration: 6 Weeks, 10.0 hrs per week  
Contact Hours: 20  
Classroom: 20

**Topics Covered Extensively:** Solar  
Economics; Domestic Hot Water; Swimming  
Pool Heating; Space Heating

**Solar Systems-Heat. & Cool. of Bldgs.**

Instructor: Tryon, John G.  
(702) 739-3701  
Department: Cont. Ed., Nev. Sol.  
Ener. Assoc.

Program or  
Curriculum: Solar Systems  
Student Level: All levels  
Duration: 7 Weeks, 4.0 hrs per week  
Contact Hours: 28  
Classroom: 28  
Topics Covered Extensively:  
Marketing/Market Analysis; Solar System  
Components; Solar Systems Design; Space  
Heating  
Number of Times Taught: 1  
Average Enrollment: 15.

**Solar Systems-Swimming Pools**

Instructor: Tryon, John G.  
(702) 739-3701  
Department: Cont. Ed., Nev. Sol.  
Ener. Assoc.

Program or  
Curriculum: Solar Systems  
Student Level: All levels  
Duration: 2 Weeks, 4.5 hrs per week  
Contact Hours: 9  
Classroom: 6  
Topics Covered Extensively: Plumbing  
Techniques; Solar System Components;  
Solar Economics; Solar Systems Design;  
Solar Systems Installation; Swimming  
Pool Heating  
Number of Times Taught: 1  
Average Enrollment: 20

**Topics in Physics: Solar Energy**

Instructor: Dundon, J.M.  
(702) 739-3539  
Course Number: PHY 1008  
Department: Sci. Math., &  
Engineering/Physics  
Credits: 1  
Student Level: All levels  
Duration: 5 Weeks, 3.0 hrs per week  
Contact Hours: 15  
Classroom: 15  
Number of Times Taught: 2  
Average Enrollment: 40

**NEVADA RENO, U OF**

RENO, Nevada 89557  
(702) 784-1110

(2568)

**SOLAR RELATED COURSES****Solar Energy 483-783**

Instructor: Hallelt, J.  
(702) 784-6792  
Course Number: 483-783  
Department: Arts and Sci.-Physics  
Credits: 3

1978-79 National Solar Energy Education Directory

Nevada

**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45  
**Topics Covered Extensively:** Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer  
**Number of Times Taught:** 2  
**Average Enrollment:** 15

**Solar Engineering**

**Instructor:** McKee, R. B.  
 (702) 784-6880  
**Course Number:** 374  
**Department:** Mechanical Engineering  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 5.0 hrs per week  
**Contact Hours:** 75  
**Classroom:** 30  
**Laboratory:** 45  
**Topics Covered Extensively:** Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
**Number of Times Taught:** 1  
**Average Enrollment:** 10

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**Community/Junior Colleges**

**CLARK CO CMTY COLLEGE**  
 LAS VEGAS, Nevada 89030  
 (702) 643-6060

(10362)

**PROGRAMS AND CURRICULUM**

**Solar Energy Technology**  
**Degree:** AD, OT, Solar Energy Tech., Applied Science  
**Contact:** Comarow, David  
 (702) 643-6060  
**Students Taking or Completing Offering:** Solar Technician, Sheet Metal Worker, Electrician, Plumber

**SOLAR RELATED COURSES**

**Advanced Solar Energy Technology**  
**Instructor:** Comarow, David  
 (702) 643-6060  
**Course Number:** SOL 201  
**Department:** Science  
**Program or**  
**Curriculum:** Solar Energy Technology  
**Credits:** 3  
**Student Level:** Freshman or Sophomore  
**Duration:** 15 Weeks, 6.0 hrs per week  
**Contact Hours:** 90  
**Classroom:** 45  
**Laboratory:** 45  
**Topics Covered Extensively:** Appropriate

Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Materials Research; Plumbing Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Law/Legislation; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

**Introduction to Solar Technology**

**Instructor:** Comarow, David  
 (702) 643-6060  
**Course Number:** SOL 119  
**Department:** Science  
**Program or**  
**Curriculum:** Solar Energy Technology  
**Credits:** 4  
**Student Level:** Freshman or Sophomore  
**Duration:** 15 Weeks, 9.0 hrs per week  
**Contact Hours:** 135  
**Classroom:** 90  
**Laboratory:** 45

**Topics Covered Extensively:** Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

**Passive Solar Heating and Cooling Technology**

**Instructor:** Comarow, David  
 (702) 643-6060  
**Course Number:** SOL 130  
**Department:** Science  
**Program or**  
**Curriculum:** Solar Energy Technology  
**Credits:** 3  
**Student Level:** Freshman or Sophomore  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45  
**Topics Covered Extensively:** Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Solar Economics; Solar Home Construction; Space Heating; Space Cooling

**Practicum in Solar Technology**

**Instructor:** Comarow, David  
 (702) 643-6060  
**Course Number:** SOL 1210  
**Department:** Science  
**Program or**  
**Curriculum:** Solar Energy Technology  
**Credits:** 3  
**Student Level:** Freshman or Sophomore  
**Duration:** 15 Weeks, 9.0 hrs per week  
**Contact Hours:** 135

Topics Covered Extensively: Domestic Hot Water; Swimming Pool Heating; Process Heat, Industrial; Space Heating; Space Cooling

Solar Energy Technology--Home Owner

Instructor: Comarov, David

(702) 643-6060

Course Number: ENV 1163

Department: Science

Program or

Curriculum: Solar Energy Technology

Student Level: All Levels

Duration: 1 Weeks, 15.0 hrs per week

Contact Hours: 15

Classroom: 15

Topics Covered Extensively: Alternate

Energy Sources; Appropriate Technology;

Energy Conservation; Energy Conversion;

Energy Storage; Heat and Energy

Transfer; Intro. to Solar Energy;

Passive Solar Technology; Plumbing

Techniques; Solar System Components;

Solar Economics; Solar Home

Construction; Solar Collector

Evaluation/Design; Solar Systems

Design; Solar Systems Installation;

Solar Systems Maintenance; Solar

Systems Testing and Evaluation;

Domestic Hot Water; Swimming Pool

Heating; Space Heating; Space Cooling

Number of Times Taughts: 7

Average Enrollment: 100

1978-79 National Solar Energy Education Directory

New Hampshire

**Colleges/Universities**

DARTMOUTH COLLEGE

HANOVER, New Hampshire  
(603) 646-1110

(2573)

**PROGRAMS AND CURRICULA**

\*Solar Studies-Bldg, Heat, and Photov.

**SOLAR RELATED COURSES**

\*Intro. to Solar Energy

Department: Thayer School of Eng'r  
Program or Curriculum: \*Solar Studies-Bldg,  
Heat, and Photov.

Student Level: All levels

Topics Covered Extensively: Intro. to  
Solar Energy

\*Solar Energy Design

Department: Thayer School of Eng'r  
Program or Curriculum: \*Solar Studies-Bldg,  
Heat, and Photov.

Student Level: All levels

Topics Covered Extensively: Solar System  
Components; Solar Collector  
Evaluation/Design; Solar Systems Design

Classroom: 24

Topics Covered Extensively: Alternate  
Energy Sources; Energy Conversion;  
Energy Storage; Intro. to Solar Energy  
Number of Times Taught: 3  
Average Enrollment: 40

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NEW ENGLAND COLLEGE

HENNIKER, New Hampshire  
(603) 428-2211

(2579)

**SOLAR RELATED COURSES**

Energy Issues

Instructor: Lemons, John  
(603) 428-2388  
Course Number: ES202  
Department: Environmental Studies  
Credits: 4  
Student Level: All levels  
Duration: 12 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Topics Covered Extensively: Alternate  
Energy Sources; Energy Conservation  
Average Enrollment: 40

**Vocational/Technical Colleges**

NH VOC-TECH, MANCHESTER

MANCHESTER, New Hampshire  
(603) 668-6706

(2582)

**PROGRAMS AND CURRICULA**

Solar Energy Certificate Program

Degree: Solar Energy  
Contact: Magnon, David  
(603) 668-6706

Students Taking or Completing Offering:  
Educator, Do-it-yourself Homeowner

**SOLAR RELATED COURSES**

Energy Conservation - Principles

Instructor: Magnon, David  
(603) 668-6706

Course Number: M941EV

Department: Evening

Program or Curriculum: Solar Energy  
Certificate Program

Credits: 3

Student Level: All levels

Duration: 12 Weeks, 3.0 hrs per week

Contact Hours: 36

Topics Covered Extensively: Energy  
Conservation

Number of Times Taught: 1

Average Enrollment: 20

Energy Survey & Alternative Systems

Instructor: Magnon, David  
(603) 668-6706

Course Number: M940EV

Department: Evening

Program or Curriculum: Solar Energy  
Certificate Program

Credits: 3

Student Level: All levels

Duration: 12 Weeks, 3.0 hrs per week

Contact Hours: 36

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Intro. to Solar  
Energy; Passive Solar Technology

Number of Times Taught: 1

Average Enrollment: 20

NH PLYMOUTH ST COLLEGE, U

PLYMOUTH, New Hampshire  
(603) 538-1550

(2591)

**SOLAR RELATED COURSES**

\*Solar Energy Survey

Course Number: 74.111  
Department: Natural Science  
Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 9 Weeks, 3.0 hrs per week  
Contact Hours: 24

**Principles of Solar Design**

Instructor: Magnon, David  
 Course Number: M943EV  
 Department: Evening Extension  
 Program or Curriculum: Solar Energy Certificate Program  
 Credits: 3  
 Student Level: All levels  
 Duration: 12 Weeks, 3.0 hrs per week  
 Contact Hours: 36  
 Topics Covered Extensively: Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design

**Solar Construction & Installation Tech.**

Instructor: Magnon, David  
 Course Number: M944EV  
 Department: Evening Extension  
 Program or Curriculum: Solar Energy Certificate Program  
 Credits: 4  
 Student Level: All levels  
 Duration: 12 Weeks, 4.0 hrs per week  
 Contact Hours: 48  
 Topics Covered Extensively: Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance

**Solar Energy - a Prime Energy Resource**

Instructor: Magnon, David  
 Course Number: M942EV  
 Department: Evening Extension  
 Program or Curriculum: Solar Energy Certificate Program  
 Credits: 4  
 Student Level: All levels  
 Duration: 12 Weeks, 4.0 hrs per week  
 Contact Hours: 48  
 Topics Covered Extensively: Alternate Energy Sources; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Collector Evaluation/Design; Space Heating

**Solar Heating Systems**

Instructor: Byrne, E.  
 Course Number: 404  
 Department: HVAC  
 Credits: 4  
 Student Level: All levels  
 Duration: 12 Weeks, 4.0 hrs per week  
 Contact Hours: 48  
 Topics Covered Extensively: Plumbing Techniques; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
 Number of Times Taught: 4  
 Average Enrollment: 25

**Solar Seminar - Integrated Projects**

Instructor: Magnon, David  
 Course Number: M945EV  
 Department: Evening Extension  
 Program or Curriculum: Solar Energy Certificate Program  
 Credits: 3  
 Student Level: All levels  
 Duration: 12 Weeks, 3.0 hrs per week  
 Contact Hours: 36

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NH VOC TECH C NASHUA  
 NASHUA, New Hampshire  
 (603) 882-6923

(9236)

**SOLAR RELATED COURSES**

**Energy and Energy Sources**  
 Instructor: Mihager, Lawrence  
 Course Number: 826  
 Department: Math/Science  
 Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 12 Weeks, 3.0 hrs per week  
 Contact Hours: 36  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Intro. to Solar Energy; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 20

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**Other Educational Institutions****NEW ENGLAND CENTER FOR APPROPRIATE TECH.**

(90250)

15 Garrison Ave.  
 Durham, New Hampshire 03824

**SOLAR RELATED COURSES**

\***Passive Solar Workshops-incls. Greenhouse**  
 Instructor: O'Donnell, Richard  
 (603) 862-2764  
 Topics Covered Extensively: Passive Solar Technology

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**Colleges/Universities**

**FARLGH DCKSH TEANECK CAM**  
TEANECK, New Jersey  
(201) 836-6300

(2607)

**SOLAR RELATED COURSES**

**Solar Energy**  
Instructor: Wieden, S.  
(201) 836-6300  
Course Number: FH431  
Department: Physics  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Appropriate Technology; Materials Research; Solar Collector Evaluation/Design  
Number of Times Taught: 1  
Average Enrollment: 10

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**GLASSBORO STATE COLLEGE**  
GLASSBORO, New Jersey  
(609) 445-5000

(2609)

**PROGRAMS AND CURRICULA***Energy and Trans. Concentration*

Degree: MA, BA, Arts  
Contact: Weiss, Leigh  
(609) 445-6209

Students Taking or Completing Offering:  
Educator, Do-it-yourself Homeowner,  
Installer-Residential (Solar System),  
Installer-Commercial (Solar System),  
Solar Technician

**SOLAR RELATED COURSES**

**Advanced Solar Energy Systems**  
Instructor: Weiss, Leigh B.  
(609) 445-6209  
Department: Industrial Education & Technology  
Program or Curriculum: Energy and Trans Concentration  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 6.0 hrs per week  
Contact Hours: 96  
Classroom: 60  
Laboratory: 36  
Topics Covered Extensively: Energy Conservation; Energy Storage; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling  
Number of Times Taught: 1  
Average Enrollment: 10

**Solar Energy**  
Instructor: Weiss, Leigh B.  
(609) 445-6209  
Department: Industrial Education & Technology  
Program or Curriculum: Energy and Trans Concentration  
Credits: 3  
Student Level: Junior or Senior  
Duration: 17 Weeks, 6.0 hrs per week  
Contact Hours: 102  
Classroom: 70  
Laboratory: 32  
Topics Covered Extensively: Energy Conservation; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
Number of Times Taught: 8  
Average Enrollment: 20

**MONTCLAIR STATE COLLEGE**  
UPPER MONTCLAIR, New Jersey  
(201) 893-4000

(2617)

**PROGRAMS AND CURRICULA**

**Industrial Powers**  
Degree: BA, BS  
Students Taking or Completing Offering:  
Educator, Electrician, Plumber, Sheet Metal Worker

**SOLAR RELATED COURSES**

**Alternate Energy Conversion Systems**  
Instructor: Greenwald, Martin  
(201) 893-4163  
Course Number: 484  
Department: Industrial Educ. & Technology  
Program or Curriculum: Industrial Powers  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 4.0 hrs per week  
Contact Hours: 64  
Classroom: 32  
Laboratory: 32  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Intro. to Solar Energy; Solar Economics; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Elec'l Generation, Central; Elec'l Generation, Small Scale; Space Heating; Wind Power, Central Systems; Wind Power, Small Systems

Number of Times Taught: 8  
 Average Enrollment: 20

**Hind Energy Conversion Systems**

Instructor: Greenwald, Martin  
 (201) 893-4163  
 Course Number: 485  
 Department: Industrial Educ. & Technology  
 Program or Curriculum: Industrial Powers  
 Credits: 3  
 Student Level: All levels  
 Duration: 16 Weeks, 4.0 hrs per week  
 Contact Hours: 64  
 Classroom: 32  
 Laboratory: 32  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Marketing/Market Analysis; Solar Economics; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Elec'l Generation, Central; Elec'l Generation, Small Scale; Wind Power, Central Systems; Wind Power, Small Systems  
 Number of Times Taught: 1  
 Average Enrollment: 25

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**NJ INSTITUTE TECHNOLOGY** (2621)  
 NEWARK, New Jersey  
 (201) 645-5321

**PROGRAMS AND CURRICULA****Mech. Engrg. & Technology**

Degree: BS, Mech. Engrg., Mech. Engrg. Tech.  
 Contact: Kirchner, R.  
 (201) 645-5378  
 Students Taking or Completing Offering:  
 Architect, Solar Engineer, Other

**SOLAR RELATED COURSES****Introduction to Solar Energy**

Instructor: Kirchner, R.  
 (201) 645-5378  
 Course Number: ME 480  
 Department: Mechanical Engineering  
 Program or Curriculum: Mech. Engrg. & Technology  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48  
 Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Solar Collector Evaluation Design  
 Number of Times Taught: 5  
 Average Enrollment: 20

**Solar Energy Applications**

Instructor: Kirchner, R.  
 (201) 645-5378  
 Course Number: MET417  
 Department: Mechanical Engineering  
 Program or Curriculum: Mech. Engrg. & Technology  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 45  
 Laboratory: 3  
 Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Solar System Components; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
 Number of Times Taught: 4

**Solar Heating Design**

Instructor: Kirchner, R.  
 (201) 645-5378  
 Department: Mechanical Engineering  
 Program or Curriculum: Mech. Engrg. & Technology  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48  
 Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Solar Economics; Solar Systems Design; Domestic Hot Water; Space Heating

**PRINCETON UNIVERSITY** (2627)  
 PRINCETON, New Jersey  
 (609) 452-3000

**PROGRAMS AND CURRICULA****Energy Conversion and Resources**

Degree: PhD, MS, BA, BS, Bachelor of Engineering  
 Contact: Bogdonoff, Seymour  
 (609) 452-5125  
 Students Taking or Completing Offering:  
 Architect, Educator, Researcher, Solar Engineer

**SOLAR RELATED COURSES****Characteristics and Technology of Materials**

Instructor: Royce, B. S. H.  
 (609) 452-4681  
 Course Number: ENGR 202  
 Department: Mechanical and Aerospace Engineering  
 Program or Curriculum: Energy Conversion and Resources

Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 13 Weeks, 3.0 hrs per week  
 Contact Hours: 39  
 Topics Covered Extensively: Materials Research; Photovoltaics  
 Number of Times Taught: 5  
 Average Enrollment: 13

*Ener. and the Envir.: A Quantitative App.*  
 Instructor: Socolow, R.  
 Course Number: (609) 452-5446  
 Department: ENGP 213  
 Mechanical and Aerospace Engineering  
 Program or Curriculum: Energy Conversion and Resources  
 Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 13 Weeks, 3.0 hrs per week  
 Contact Hours: 39  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar Energy Policy Development; Solar System Components; Solar Economics; Space Heating  
 Number of Times Taught: 7  
 Average Enrollment: 30

*Intro. to Solar Thermal Engineering*  
 Instructor: Antal, M. J.  
 Course Number: (609) 452-5136  
 Department: ENGE 101  
 Mechanical and Aerospace Engineering  
 Program or Curriculum: Energy Conversion and Resources  
 Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 13 Weeks, 3.0 hrs per week  
 Contact Hours: 39  
 Classroom: 20  
 Laboratory: 19  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Systems Design; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 50

*Physical Processes of Energy Conversion*  
 Instructor: Miles, R. B.  
 Course Number: (609) 452-5131  
 Department: MAE 328  
 Mechanical and Aerospace Engineering  
 Program or Curriculum: Energy Conversion and Resources  
 Credits: 3  
 Student Level: Junior or Senior

Duration: 13 Weeks; 3.0 hrs per week  
 Contact Hours: 39  
 Topics Covered Extensively: Energy Conversion; Energy Storage  
 Number of Times Taught: 5  
 Average Enrollment: 20

*Special Topics in Power & Propulsion*  
 Instructor: Antal, M. J.  
 Course Number: (609) 452-5136  
 Department: Mechanical and Aerospace Engineering  
 Program or Curriculum: Energy Conversion and Resources

Credits: 3  
 Student Level: Junior or Senior  
 Duration: 13 Weeks, 3.0 hrs per week  
 Contact Hours: 39  
 Classroom: 39  
 Topics Covered Extensively: Biomass Conversion; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar System Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Elec'l Generation; Central Process Heat; Agricultural Process Heat; Industrial Space Heating  
 Number of Times Taught: 3  
 Average Enrollment: 10

*States of Matter*  
 Instructor: Royce, B. S. H.  
 Course Number: (609) 452-4681  
 Department: MAE 324  
 Mechanical and Aerospace Engineering  
 Program or Curriculum: Energy Conversion and Resources  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 13 Weeks, 3.0 hrs per week  
 Contact Hours: 39  
 Classroom: 39  
 Topics Covered Extensively: Materials Research; Photovoltaics  
 Number of Times Taught: 1  
 Average Enrollment: 10

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 RAMAPO C OF NEW JERSEY (9344)  
 MAHWAH, New Jersey  
 (201) 825-2800

#### PROGRAMS AND CURRICULA

*Alternative Energy*  
 Degree: BA, BS, Environmental Studies, Human Ecology  
 Contact: Harrison, Eugene  
 (201) 825-2800

**Students Taking or Completing Offering:**  
**Educator, Researcher, Do-it-yourself**  
**Homeowner, Other**

**SOLAR RELATED COURSES****Alternative Energy Design**

Instructor: Makofske, W.  
 Course Number: (201) 825-2800  
 Department: 400  
 Environmental Studies  
 Program or Curriculum: Alternative Energy  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 4.0 hrs per week  
 Contact Hours: 64  
 Classroom: 48  
 Laboratory: 16  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Wind Power, Small Systems

**Alternative Energy Sources**

Instructor: Makofske, William  
 Course Number: (201) 825-2800  
 Department: 300  
 Environmental Studies  
 Program or Curriculum: Alternative Energy  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 4.0 hrs per week  
 Contact Hours: 64  
 Classroom: 64  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Photovoltaics; Solar System Components  
 Number of Times Taught: 3  
 Average Enrollment: 40

**Alternative Energy Workshop**

Instructor: Greenwald, M./ Makoske, W.  
 Course Number: (201) 825-2800  
 Department: 300  
 Environmental Studies  
 Program or Curriculum: Alternative Energy  
 Credits: 4  
 Student Level: All levels  
 Duration: 16 Weeks, 4.0 hrs per week  
 Contact Hours: 64  
 Classroom: 24  
 Laboratory: 40  
 Topics Covered Extensively: Solar System Components; Solar Collector Evaluation/Design; Solar Systems

Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Wind Power, Small Systems  
 Number of Times Taught: 6  
 Average Enrollment: 25

**Energy Efficient Solar Design**

Instructor: Makofske, W.  
 Course Number: (201) 825-2800  
 Department: 300  
 Environmental Studies  
 Program or Curriculum: Alternative Energy  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 4.0 hrs per week  
 Contact Hours: 64  
 Classroom: 64  
 Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling  
 Number of Times Taught: 3  
 Average Enrollment: 50

**Energy, Power and the Environment**

Instructor: Makoske, W.  
 Course Number: (201) 825-2800  
 Department: 200-300  
 Environmental Studies  
 Program or Curriculum: Alternative Energy  
 Credits: 4  
 Student Level: All levels  
 Duration: 16 Weeks, 4.0 hrs per week  
 Contact Hours: 64  
 Classroom: 64  
 Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy  
 Number of Times Taught: 3  
 Average Enrollment: 40

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RUTGERS U NEW BRUNSWICK  
 NEW BRUNSWICK, New Jersey  
 (201) 932-1766

(6964)

**SOLAR RELATED COURSES****Solar Thermal Ener. Collect. and Stor.**

Instructor: Briggs, David G.  
 Course Number: (201) 923-3656  
 Department: 650:474  
 Mech. Indus. and Aerospace Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Topics Covered Extensively: Energy

Storage; Heat and Energy Transfer;  
Intro. to Solar Energy; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Domestic Hot Water; Space  
Heating; Space Cooling  
Number of Times Taught: 1  
Average Enrollment: 63

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**STOCKTON STATE COLLEGE**  
POMONA, New Jersey  
(609) 652-1776

(9345)

#### SOLAR RELATED COURSES

*Solar Energy*  
Instructor: Taylor, Harold  
(609) 652-1776  
Course Number: PITS3320  
Department: Natural Sciences and  
Mathematics  
Credits: 4  
Student Level: Junior or Senior  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 53  
Classroom: 53  
Topics Covered Extensively: Appropriate  
Technology; Energy Conversion; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Solar System Components; Solar  
Economics; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Testing and  
Evaluation; Domestic Hot Water;  
Swimming Pool Heating; Space Heating  
Number of Times Taught: 4  
Average Enrollment: 30

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#### Community/Junior Colleges

**BROOKDALE CHTY COLLEGE** (8404)  
LINCROFT, New Jersey  
(201) 842-1900

#### SOLAR RELATED COURSES

*Solar Energy: Its Nature and Use*  
Instructor: Zipp, Paul  
(201) 842-1900  
Course Number: NSC70A  
Department: Extension-Natural and  
Applied Sciences  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 2.0 hrs per week  
Contact Hours: 30  
Topics Covered Extensively: Intro. to  
Solar Energy

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#### MIDDLESEX COUNTY COLLEGE

(2615)

EDISON, New Jersey  
(201) 548-6000

#### SOLAR RELATED COURSES

\*Workshop Appr. to Teach. Train. in Energ.  
Department: Project Watte

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#### Vocational/Technical Colleges

**MERCER CO AREA VOC. TECH. SCHOOLS** (90560)  
1085 Old Trenton Rd.  
TRENTON, New Jersey 08690

#### SOLAR RELATED COURSES

\*Install Solar Heat. & Cool.  
Department: Plumbing; Heating; &  
Refrig.  
Topics Covered Extensively: Plumbing  
Techniques; Solar System Components;  
Solar Systems Installation; Domestic  
Hot Water; Space Heating; Space Cooling

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#### OCEAN COUNTY VOCATIONAL TECHNICAL

(90380)

SCHOOLS  
Route 571  
Jackson, New Jersey 08527

#### PROGRAMS AND CURRICULA

\*Sol. Ener. Theory - Heat., Vent., A/C  
Tech.  
Degree: Evening School Certificate

#### SOLAR RELATED COURSES

\*Sol. Ener. Theory - Heat., Vent., A/C Tech.  
Department: Evening School  
Program or  
Curriculum: \*Sol. Ener. Theory -  
Heat., Vent., A/C  
Tech.

Student Level: All levels  
Duration: 15 Weeks  
Topics Covered Extensively: Solar System  
Components; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Domestic Hot Water; Space  
Heating

\*Solar Energy Workshop  
Department: Evening School  
Student Level: All levels  
Topics Covered Extensively: Solar System  
Components; Solar Economics; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Solar Systems

## Installation: Domestic Hot Water

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PASSAIC SCHOOL OF DRAFTING  
657 Main Avenue  
Paterson, New Jersey 07055

## PROGRAMS AND CURRICULA

*Solar Energy Design*

Degree: No; Architectural Draftsman  
Contact: Adamoff, O. J.  
(201) 777-4209

Students Taking or Completing Offering:  
Trade Specialty

## SOLAR RELATED COURSES

*Arch. Drafting (Solar Energy Des.)*

Instructor: Stix, G.H.  
(201) 777-4909  
Department: Arch. Drafting;  
Program or Curriculum: Solar Energy Design  
Student Level: High School Graduate  
Duration: 4 Weeks, 25.0 hrs per week  
Contact Hours: 100  
Classroom: 10  
Laboratory: 90  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Solar Collector Evaluation/Design; Solar Systems Design

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## SALEM COUNTY VOCATIONAL TECHNICAL SCHOOLS

R.D. #2, Box 350  
Woodstown, New Jersey 08098

## PROGRAMS AND CURRICULA

*\*Plumbing and Heating Trades*

## SOLAR RELATED COURSES

\*Introduction to Solar Heating  
Department: Continuing Education  
Contact Hours: 35  
Topics Covered Extensively: Space Heating; Space Cooling

*\*Unit on Solar Energy*

Program or Curriculum: \*Plumbing and Heating Trades  
Student Level: All levels  
Topics Covered Extensively: Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water

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UNION CO TECHNICAL INST  
SCOTCH PLAINS, New Jersey  
(201) 889-2000

(6139)

## SOLAR RELATED COURSES

*Solar Heating I*

Instructor: Mai, Frank  
(201) 889-2000  
Course Number: HV-201-71  
Department: Heating Ventilating-Air Conditioning  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 15  
Laboratory: 30  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling  
Number of Times Taught: 2  
Average Enrollment: 20

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## other Educational Institutions

ESSEX COUNTY TECHNICAL CAREERS CENTER (90390)  
91 West Market St.  
Newark, New Jersey

## PROGRAMS AND CURRICULA

\*Day Program - Sol. Heat. Systems  
Degree: Certificate

\*Night Program - Sol. Heat Systems  
Degree: Certificate

## SOLAR RELATED COURSES

*\*Solar Heating Systems - (Day Course)*

Department: Adult Education  
Program or Curriculum: \*Day Program - Sol. Heat. Systems  
Contact Hours: 300  
Topics Covered Extensively: Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Space Heating; Space Cooling

**Solar Heating Systems - (Night Course)**

Department: Adult Education  
Program or Curriculum: Night Program - Solar Heat. Systems  
Contact Hours: 120  
Topics Covered Extensively: Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Space Heating; Space Cooling

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SOUTHERN NEW JERSEY OIC  
Camden, New Jersey

(90070)

**PROGRAMS AND CURRICULA**

Solar Energy Unit Installer Program  
Degree: Completion Certificate  
Contact: Keene, Joseph P.  
(609) 944-2545  
Students Taking or Completing Offering:  
Installer-Residential (Solar System)

**SOLAR RELATED COURSES****Solar Energy Installer**

Instructor: Keene, Joseph P.  
(609) 966-2545  
Program or Curriculum: Solar Energy Unit Installer Program  
Student Level: High School Graduate  
Duration: 26 Weeks, 5.0 hrs per week  
Contact Hours: 130  
Topics Covered Extensively: Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Plumbing Techniques; Solar System Components; Solar Systems' Installation; Domestic Hot Water; Swimming Pool Heating; Space Heating

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**New Mexico****Solar Energy Research Institute****Colleges/Universities**

**NEW MEXICO HIGHLANDS U** (2653)  
 LAS VEGAS, New Mexico 87701  
 (505) 425-7511

**PROGRAMS AND CURRICULA**

**Solar Greenhouse Construction**  
 Degree: NO,  
 Contact: Martinez, E. Eloy  
 (505) 425-7511

**SOLAR RELATED COURSES**

**Introduction to Solar Heating**  
 Instructor: Yarger, Frederick L.  
 (505) 425-7511  
 Course Number: 135  
 Department: Physics  
 Credits: 2  
 Student Level: All levels  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 20  
 Classroom: 20

Topics Covered Extensively: Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction  
 Number of Times Taught: 7  
 Average Enrollment: 20

**Solar Greenhouse Construction**  
 Instructor: Coca, Michael  
 Department: Industrial Education  
 Program or Curriculum: Solar Greenhouse Construction  
 Student Level: All levels  
 Duration: 8 Weeks, 3.0 hrs per week  
 Contact Hours: 24  
 Topics Covered Extensively: Energy Storage; Intro. to Solar Energy; Solar Home Construction; Space Heating; Space Cooling  
 Number of Times Taught: 2  
 Average Enrollment: 8

**NM MAIN CAMPUS, U OF** (10313)  
 ALBUQUERQUE, New Mexico 87131  
 (505) 277-0111

**SOLAR RELATED COURSES**

**Applied Solar Energy-Engineering Systems**  
 Instructor: Wessling, F. C.  
 (505) 277-4937  
 Course Number: ME 425  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Topics Covered Extensively: Energy Conservation; Energy Storage; Heat and Energy Transfer; Passive Solar

\* Technology; Solar Collector  
 EVAluation/Design; Solar Systems Design  
 Number of Times Taught: 3  
 Average Enrollment: 18

**Energy Utilization and Conversion**

Instructor: Houghton, A. V.  
 (505) 277-5604  
 Course Number: 382  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Intro. to Solar Energy; Photovoltaics; Solar Energy Policy Development; Solar System Components  
 Number of Times Taught: 7  
 Average Enrollment: 22

**Power Generating Systems**

Instructor: Houghton, A. V.  
 (505) 277-5604  
 Course Number: 483  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Energy Conservation; Marketing/Market Analysis; Materials Research; Plumbing Techniques; Sheet Metal Techniques  
 Number of Times Taught: 3  
 Average Enrollment: 25

**Solar Energy System Design and Analysis**

Instructor: Wessling, P. C.  
 (505) 277-4937  
 Course Number: M.E. 525  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Topics Covered Extensively: Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Collector Evaluation/Design; Solar Systems Design  
 Number of Times Taught: 2  
 Average Enrollment: 10

**Solar Energy Use**

Instructor: Ebenezer, J.  
 (505) 277-5221  
 Course Number: 395  
 Department: Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48  
 Topics Covered Extensively: Passive

Solar Technology; Solar System Components; Domestic Hot Water; Space Heating  
Number of Times Taught: 3  
Average Enrollment: 170

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NM STATE U MAIN CAMPUS  
LAS CRUCES, New Mexico 88003  
(505) 646-2035

#### PROGRAMS AND CURRICULA

##### *Solar Engineering*

Degree: PhD, MS, Mechanical Engr.  
Contact: Smith, P. R.  
(505) 646-3501

Students Taking or Completing Offering:  
Researcher, Solar Engineer

#### SOLAR RELATED COURSES

##### *Solar Energy*

Instructor: Mancini, T. R.  
(505) 646-3501  
Course Number: 555  
Department: Mechanical Engr.  
Program or Curriculum: Solar Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Classroom: 39

Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Process Heat, Industrial; Space Heating; Space Cooling

Number of Times Taught: 4  
Average Enrollment: 15

##### *Solar Energy Utilization*

Instructor: Mancini, T.R./ Fenton, D.L.  
(505) 646-3501  
Course Number: 455  
Department: Mechanical Engineering  
Program or Curriculum: Solar Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Classroom: 39

Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar

Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

Number of Times Taught: 10  
Average Enrollment: 30

##### *Solar Heating and Cooling*

Instructor: Lumsdale, E./ Mancini, T.R.  
(505) 646-3501  
Course Number: 565  
Department: Mechanical Engr.  
Program or Curriculum: Solar Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Classroom: 39  
Topics Covered Extensively: Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Economics; Solar Home Construction; Solar Law/Legislation; Solar Collector Evaluation/Design; Space Heating; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

Number of Times Taught: 1  
Average Enrollment: 10

##### *Solar Thermal Power*

Instructor: Mulholland, G. P.  
(505) 646-3501  
Course Number: 575  
Department: Mechanical Engr.  
Program or Curriculum: Solar Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Classroom: 39  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Materials Research; Solar System Components; Solar Law/Legislation; Solar Systems Design; Solar Systems Testing and Evaluation; Elec'l Generation, Central

Number of Times Taught: 1  
Average Enrollment: 8

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SANTA FE COLLEGE OF  
SANTA FE, New Mexico 87501  
(505) 932-6011

(2649)

#### SOLAR RELATED COURSES

##### *Elect. from the Wind*

Instructor: Dankoff, Mark  
(505) 471-2573  
Department: Continuing Education

**New Mexico****Solar Energy Research Institute**

**Student Level:** College Graduate  
**Duration:** 8 Weeks, 2.0 hrs per week  
**Contact Hours:** 16  
**Classroom:** 12  
**Topics Covered Extensively:** Passive Solar Technology; Solar Home Construction  
**Number of Times Taught:** 15  
**Average Enrollment:** 10

**Solar Energy**

**Instructor:** Haggard, Keith  
(505) 983-1006  
**Department:** Continuing Education  
**Student Level:** College Graduate  
**Duration:** 8 Weeks, 2.0 hrs per week  
**Contact Hours:** 16  
**Classroom:** 12  
**Topics Covered Extensively:** Passive Solar Technology; Solar Home Construction; Wind Power, Small Systems  
**Number of Times Taught:** 15  
**Average Enrollment:** 10

**Solar Greenhouses**

**Instructor:** Yanda, Bill  
(505) 983-1006  
**Department:** Continuing Education  
**Student Level:** College Graduate  
**Duration:** 8 Weeks; 2.0 hrs per week  
**Contact Hours:** 16  
**Classroom:** 12  
**Topics Covered Extensively:** Passive Solar Technology; Solar Home Construction; Wind Power, Small Systems  
**Number of Times Taught:** 15  
**Average Enrollment:** 10

**Solar-Adobe Design and Construction**

**Instructor:** Wilson, Quentin/  
Chalm, Mark  
(505) 583-2356  
**Department:** Continuing Education  
**Student Level:** All levels  
**Duration:** 8 Weeks, 3.0 hrs per week  
**Contact Hours:** 24  
**Classroom:** 24  
**Topics Covered Extensively:** Solar Home Construction; Space Heating; Space Cooling

**NORTHERN NM COMMUNITY COLLEGE**  
EL RITO, New Mexico 87530  
(505) 581-4501

(29087)

**SOLAR RELATED COURSES****Solar-Adobe Design and Construction**

**Instructor:** Wilson, Quentin C.  
(505) 583-2356  
**Department:** Continuing  
Education/Community  
Services

**Student Level:** All levels  
**Duration:** 8 Weeks, 3.0 hrs per week  
**Contact Hours:** 24  
**Classroom:** 24  
**Topics Covered Extensively:** Solar Home Construction; Solar Systems Design  
**Number of Times Taught:** 7  
**Average Enrollment:** 12

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**Community/Junior Colleges**

## 1978-79 National Solar Energy Education Directory

New York

## Colleges/Universities

**ADELPHI UNIVERSITY**  
GARDEN CITY, New York 11530  
(516) 294-8700

(2666)

## PROGRAMS AND CURRICULA

## Energy Institute

Degree: M.S., BS, Physics, Energy  
Studies:

Contact: Docher, John  
(516) 294-8700

Students Taking or Completing Offerings:  
Educator, Researcher

## SOLAR RELATED COURSES

## Physics of Energy

Instructor: Burke, Edward  
(516) 294-8700

Course Number: 117

Department: Physics

Program or

Curriculum: Energy Institute

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 2.0 hrs per week

Contact Hours: 30

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Conversion;  
Heat and Energy Transfer; Intro. to  
Solar Energy; Solar Energy Policy;  
Development; Solar System Components;  
Solar Economics; Solar Home  
Construction; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Maintenance;  
Domestic Hot Water; Space Heating;  
Space Cooling  
Number of Times Taught: 3  
Average Enrollment: 10

## Solar Heating and Cooling

Instructor: Garrell, Martin  
(516) 294-8700

Course Number: 670

Department: Physics

Program or

Curriculum: Energy Institute

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 2.0 hrs per week

Contact Hours: 30

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Conversion;  
Heat and Energy Transfer; Intro. to  
Solar Energy; Solar Energy Policy;  
Development; Solar Economics; Solar  
Home Construction; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Maintenance;  
Domestic Hot Water; Space Heating;  
Space Cooling  
Number of Times Taught: 1  
Average Enrollment: 10

## BARD COLLEGE

ANNANDALE-ON-HUDSON, New York 10504

(914) 758-6822

## SOLAR RELATED COURSES

## Alternative Energy Sources

Instructor: Brady, Burtch

(914) 758-6822

Department: Physics

Credits: 4.0

Student Level: All levels

Duration: 13 Weeks, 4.0 hrs per week

Contact Hours: 42

Classroom: 32

Laboratory: 2

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Intro. to Solar Energy; Elec'l  
Generation, Small Scale; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 30

## CLARKSON COLLEGE OF TECHN

POTSDAM, New York 12867

(315) 268-6400

## SOLAR RELATED COURSES

## Alternate Sources of Energy

Instructor: Clark, James

(315) 268-6588

Course Number: ME, 315

Department: Mechanical and  
Industrial Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Topics Covered Extensively: Alternate  
Energy Sources; Energy Conservation;  
Energy Conversion; Energy Storage;  
Intro. to Solar Energy; Solar Systems  
Design; Wind Power, Central Systems;  
Wind Power, Small Systems  
Number of Times Taught: 3  
Average Enrollment: 35

## COLUMBIA U MAIN DIVISION

NEW YORK, New York 10027

(212) 280-1754

## SOLAR RELATED COURSES

## Solar Energy Applications

Instructor: Sanders, W.T.

(212) 280-4126

Course Number: MEE4224X

Department: Mechanical Engineering

Credits: 3

Student Level: College Graduate

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Classroom: 36

## New York

Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling

CORNELL U STATUTORY C (11693)  
ITHACA, New York 14853  
(607) 256-1000

### SOLAR RELATED COURSES

*Energy and Man*  
Instructor: Albright, L. D.  
(607) 256-4535  
Course Number: 201  
Department: Agr. and Life Sci.,  
Agr., Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42  
Classroom: 42  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy  
Number of Times Taught: 4  
Average Enrollment: 25

CUNY BROOKLYN COLLEGE (2687)  
BROOKLYN, New York 11210  
(212) 780-5485

### PROGRAMS AND CURRICULA

*Energy Related Topics*  
Contact: Celenga, L. S.  
(212) 780-5813

### SOLAR RELATED COURSES

*Energy in a Technological Society*  
Instructor: Celenga  
(212) 780-5813  
Department: Physics  
Program or Curriculum: Energy Related Topics  
Credits: 3  
Student Level: College Graduate  
Duration: 2 Weeks, 23.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Home Construction; Elec'l Generation.

## Solar Energy Research Institute

Central; Space Heating; Space Cooling; Wind Power, Central Systems; Wind Power, Small Systems

### *Energy in a Technological Society Phys 0.3*

Instructor: Celenga

(212) 780-5813

Course Number: PHYS 0.3

Department: Physics

Program or

Curriculum: Energy Related Topics

Credits: 3

Student Level: All levels

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Photovoltaics; Solar Economics; Solar Home Construction; Elec'l Generation, Central; Elec'l Generation, Small Scale

Number of Times Taught: 3

Average Enrollment: 70

### *Energy Technology*

Instructor: Skorinko

(212) 780-5817

Course Number: PHYS 38

Department: Physics

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Photovoltaics; Solar System Components; Solar Economics; Elec'l Generation, Central; Space Heating; Space Cooling; Wind Power, Central Systems; Wind Power, Small Systems

### *Seminar Series on Energy and Solar Energy*

Instructor: Schwartz, Brian

(212) 780-5687

Department: Science

Student Level: Junior or Senior

Topics Covered Extensively:

Photovoltaics

### CUNY C OF STATEN ISLAND

STATEN ISLAND, New York 10301

(212) 720-3000

### SOLAR RELATED COURSES

#### *Solar Energy*

Instructor: Napkivell, John

(212) 390-7524

Course Number: MET 108

Department: Mechanical Technology

Credits: 3

1978-79 National Solar Energy Education Directory

New York

Student Level: High School Graduate  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42  
Number of Times Taught: 1  
Average Enrollment: 46

CUNY CITY COLLEGE  
NEW YORK, New York 10031  
(212) 690-6741

SOLAR RELATED COURSES

*Principles of Solar Energy*  
Instructor: Lustig, M.  
(212) 690-6850  
Department: Physics  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Intro. to Solar Energy  
Average Enrollment: 18

CUNY GRAD SCH C U CENTER  
NEW YORK, New York 10036  
(212) 790-4395

SOLAR RELATED COURSES

*Direct Energy Conversion*  
Instructor: Shulman, Carl  
(212) 690-4241  
Course Number: EE 5688  
Department: Electrical Engineering  
Credits:  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively:  
Photovoltaics; Elec'l Generation; Small Scale  
Number of Times Taught: 1  
Average Enrollment: 6

*Solar Energy Thermal Process*  
Instructor: Hewett, Thomas A.  
(914) 345-3212  
Course Number: ME 5533  
Department: Mechanical Engineering  
Credits:  
Student Level: College Graduate  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42  
Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 2  
Average Enrollment: 12

(2688)

HAMILTON COLLEGE  
CLINTON, New York 13323  
(315) 859-4011

(2728)

SOLAR RELATED COURSES

*Physics of Energy*  
Instructor: Ring, James W.  
(315) 859-7510  
Course Number: WT170  
Department: Physics  
Student Level: Freshman or Sophomore  
Duration: 6 Weeks, 12.0 hrs per week  
Contact Hours: 72  
Classroom: 36  
Laboratory: 36  
Number of Times Taught: 3  
Average Enrollment: 20

MANHATTAN COLLEGE  
BRONX, New York 10471  
(212) 548-1400

(2758)

SOLAR RELATED COURSES

*Direct Energy Conversion*  
Instructor: Ley, James  
(212) 548-1400  
Course Number: 735  
Department: Engineering, Electrical Engin.  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Energy Conversion  
Number of Times Taught: 2  
Average Enrollment: 18

*Energy Conversion Systems*

Instructor: Koplik, Bernard  
(212) 548-1400  
Course Number: 710  
Department: Engineering, Mech. Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Alternate Energy Sources; Energy Conversion

*Energy Sources*

Instructor: Ley, James  
(212) 548-1400  
Course Number: 466  
Department: Engineering, Elec. Engin.  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Alternate

New York

Solar Energy Research Institute

Energy Sources; Energy Conversion

Number of Times Taught: 5

Average Enrollment: 15

Radiation Heat Transfer

Instructor: Koplik, Bernard  
(212) 548-1400

Course Number: 709.

Department: Engineering, Mechanical  
Eng

Credits: 3

Student Level: College Graduate

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Topics Covered Extensively: Heat and  
Energy Transfer

Solar Energy Systems

Instructor: Koplik, Bernard  
(212) 548-1400

Course Number: 711

Department: Mechanical Engineering

Credits: 3

Student Level: College Graduate

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Topics Covered Extensively: Alternate  
Energy Sources; Energy Conversion;  
Solar System Components; Intro. to  
Solar Energy; Solar Systems Design

Number of Times Taught: 1

Average Enrollment: 15

HAZARETH C OF ROCHESTER  
ROCHESTER, New York 14610  
(716) 596-2525

SOLAR RELATED COURSES

Energy, Our Servant-Our Problem

Instructor: Gannaway, Susan  
(716) 586-2525

Course Number: CHM 111

Department: Chemistry

Credits: 30

Student Level: Freshman or Sophomore

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Classroom: 42

Topics Covered Extensively: Alternate  
Energy Sources; Energy Conservation

Number of Times Taught: 2

Average Enrollment: 30

NEW YORK UNIVERSITY  
NEW YORK, New York 10012  
(212) 593-1212

PROGRAMS AND CURRICULA

Solar Energy

Degree: Certificate of Participation

Contact: Phillips, Denis Sinclair

(212) 598-2101

SOLAR RELATED COURSES

Pract., Tech. Prob. Solv. IV-Sol. Ener.

Instructor: Hahn, Marshall S.  
(212) 598-3356

Department: Technology and

Industrial Education

Credits: 3

Student Level: College Graduate

Duration: 13 Weeks, 3.0 hrs per week

Contact Hours: 39

Topics Covered Extensively: Alternate

Energy Sources; Energy Conservation;

Energy Storage; Heat and Energy

Transfer; Intro. to Solar Energy;

Passive Solar Technology; Domestic Hot

Water; Space Heating; Wind Power, Small

Systems

Number of Times Taught: 1

Average Enrollment: 16

Solar Energy

Instructor: Wilke, Douglas A.  
(516) 759-9050

Department: NMC/Continuing

Education

Program or

Curriculum: Solar Energy

Credits: 1

Student Level: College Graduate

Duration: 1 Weeks, 24.0 hrs per week

Contact Hours: 24

Topics Covered Extensively: Alternate

Energy Sources; Appropriate Technology;

Biomass Conversion; Energy

Conservation; Energy Conversion; Energy

Storage; Heat and Energy Transfer;

Intro. to Solar Energy; Passive Solar

Technology; Photovoltaics; Plumbing

Techniques; Solar Energy Policy;

Development; Sheet Metal Techniques;

Solar System Components; Solar

Economics; Solar Home Construction;

Solar Collector Evaluation/Design;

Solar Systems Design; Solar Systems

Installation; Solar Systems,

Maintenance; Domestic Hot Water;

Swimming Pool Heating; Elec'l

Generation; Central; Elec'l Generation,

Small Scale; Process Heat,

Agricultural; Process Heat, Industrial;

Space Heating; Space Cooling; Wind

Power, Central Systems; Wind Power,

Small Systems

Number of Times Taught: 10

Average Enrollment: 30

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## 1978-79 National Solar Energy Education Directory

New York

POLYTECHNIC INST NEW YORK  
BROOKLYN, New York 11201  
(212) 643-5000

### SOLAR RELATED COURSES

**Solar Energy for Heating and Cooling:**  
Instructor: Scarl, Donald  
(516) 694-5500  
Course Number: ES920  
Department: Inter-departmental  
Credits: 3  
Student Level: College Graduate  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42  
Classroom: 42  
Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design  
Number of Times Taught: 4  
Average Enrollment: 40

RENSSELAER POLY INSTITUTE  
TROY, New York 12181  
(518) 270-6000

### SOLAR RELATED COURSES

**Energy Conscious Design**  
Instructor: Kroner, Walter  
(518) 270-6461  
Course Number: 10.4T01  
Department: Architecture  
Credits: 3  
Student Level: Junior or Senior  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42  
Classroom: 42  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Space Cooling; Wind Power; Central Systems; Wind Power, Small Systems  
Number of Times Taught: 2  
Average Enrollment: 25

### Heat Transfer in Solar Devices

Instructor: Modest, M. F.  
Scaringe, R.  
(518) 270-6545  
Course Number: 37.470  
Department: ME, AE & M  
Credits: 3  
Student Level: Junior or Senior  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42  
Classroom: 42  
Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar

Energy; Solar Collector  
Evaluation/Design; Domestic Hot Water;  
Space Heating; Space Cooling

**Solar Energy System**  
Instructor: Chen, C. N.  
(518) 270-6486

Course Number: 35.446  
Department: Electrical and Systems Engineering  
Credits:  
Student Level: Junior or Senior  
Duration: 15 weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Solar Economics; Solar Collector  
Evaluation/Design; Solar  
Design; Space Heating  
Number of Times Taught:  
Average Enrollment:

REEDER INST TECHNOLOGY  
WATKINSVILLE, New York 14623  
(716) 241-2411

### SOLAR RELATED COURSES

**Alternate Energy Sources**  
Instructor: Walter, W. H.  
Course Number: EMEM 601  
Department: Mechanical Engineering  
Credits:  
Student Level: Junior or Senior  
Duration: 14 Weeks, 4.0 hrs per week  
Contact Hours: 44  
Classroom: 44  
Topics Covered Extensively: Alternate Energy Sources; Intro. to Solar Energy; Solar System Components; Solar  
Economics; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Installation;  
Space Heating; Wind Power; Central Systems; Wind Power, Small Systems  
Number of Times Taught: 2  
Average Enrollment: 22m

ROCHESTER, UNIVERSITY  
ROCHESTER, New York 14627  
(716) 275-2121

### SOLAR RELATED COURSES

**Energy Conversion**  
Instructor: Lubin, M.  
(716) 275-5284  
Course Number: MAS 702  
Department: Mechanical and Aerospace Sciences  
Credits: 4  
Student Level: Junior or Senior  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42

New York

Solar Energy Research Institute

Classroom: 42  
Topics Covered Extensively: Energy Conversion  
Number of Times Taught: 5  
Average Enrollment: 20

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SAINT BONAVENTURE U (2817)  
SAINT BONAVENTURE, New York 14778  
(716) 375-2000

SOLAR RELATED COURSES

Alternative Energy Sources  
Instructor: Neeson, John  
(716) 375-2516  
Course Number: PHSC 115  
Department: Physics  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks; 3.0 hrs per week  
Contact Hours: 48  
Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Heat and Energy Transfer

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SAINT JOHN FISHER COLLEGE (2821)  
ROCHESTER, New York 14618  
(716) 586-4140

SOLAR RELATED COURSES

Energy: Its Science and Technology  
Instructor: Heininger, Clarence  
(716) 586-4140  
Course Number: SCI 200  
Department: Chemistry  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Collector Evaluation/Design; Wind Power, Central Systems; Wind Power, Small Systems  
Number of Times Taught: 4  
Average Enrollment: 12

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SUNY AT ALBANY (2835)  
Albany, New York 12222  
(518) 457-3300

PROGRAMS AND CURRICULA

Solar Energy Meteor. and Train. Site  
Degree: PhD, MS, BS, Atmospheric Sciences  
Contact: Stewart, Ronald  
(518) 457-7584  
Students Taking or Completing Offering:  
Educator, Researcher, Solar Technician

SOLAR RELATED COURSES

Solar Energy Workshop  
Instructor: Stewart, Ronald  
(518) 457-7584  
Department: Atmospheric Sci.  
Program or Curriculum: Solar Energy Meteor. and Train. Site  
Credits: 3  
Student Level: College Graduate  
Duration: 1 week, 40.0 hrs per week  
Contact Hours: 40  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy; Wind Power, Central Systems; Wind Power, Small Systems  
Number of Times Taught: 2  
Average Enrollment:

Solar Radiation  
Instructor: Czapski, Ulrich  
(518) 457-3991  
Course Number: 2639  
Department: Atmospheric Science  
Program or Curriculum: Solar Energy Meteor. and Train. Site  
Credits: 3  
Student Level: College Graduate  
Duration: 20 Weeks, 3.0 hrs per week  
Contact Hours: 60  
Number of Times Taught: 2  
Average Enrollment: 10

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SUNY AT BINGHAMTON (2836)  
BINGHAMTON, New York 13901  
(607) 798-2000

PROGRAMS AND CURRICULA

Physics-Specialization in Solar Energy  
Degree: BA, BS  
Physics-Specialization in Solar Energy  
Contact: Stannard, C. R.  
(607) 798-2217  
Students Taking or Completing Offering:  
Educator, Researcher, Solar Engineer

**SOLAR RELATED COURSES****Energy Sources and Conversion**

Instructor: DePuy, George  
(607) 798-2631  
Course Number: B11992  
Department: General Studies  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 35  
Classroom: 35  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Swimming Pool Heating; Elec'l Generation, Small Scale; Space Heating; Space Cooling; Wind Power, Small Systems

**Introduction to Solid State Physics**

Instructor: Stannard, C. R.  
(607) 798-2217  
Course Number: 284  
Department: Physics  
Program or Curriculum: Physics-Specialization in Solar Energy  
Credits: 4  
Student Level: Junior or Senior  
Duration: 14 Weeks, 4.0 hrs per week  
Contact Hours: 56  
Topics Covered Extensively: Energy Conversion; Materials Research; Photovoltaics  
Number of Times Taught: 8  
Average Enrollment: 6

**Solar Energy**

Instructor: Stannard, C. R.  
(607) 798-2217  
Department: Physics  
Program or Curriculum: Physics-Specialization in Solar Energy  
Credits: 4  
Student Level: All levels  
Duration: 14 Weeks, 4.0 hrs per week  
Contact Hours: 56  
Classroom: 42  
Laboratory: 14  
Topics Covered Extensively: Biomass Conversion; Energy Conservation; Energy Conversion; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Collector; Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation

**The Environment and Physical Principles**

Instructor: Stannard, C. R.  
(607) 798-2217

Course Numbers: 110  
Department: Physics  
Program or Curriculum: Physics-Specialization in Solar Energy

Credits: 4  
Student Level: All levels  
Duration: 14 Weeks, 4.0 hrs per week  
Contact Hours: 56  
Classroom: 42  
Laboratory: 14  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology  
Number of Times Taught: 2  
Average Enrollment: 30

**SUNY AT BUFFALO MAIN CAM**

BUFFALO, New York 14260  
(716) 831-9000

(2837)

**SOLAR RELATED COURSES****Advanced Thermodynamics**

Instructor: Springer, R.  
(716) 831-5472  
Course Number: ENS 529  
Department: Engineering Science  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer  
Number of Times Taught: 10  
Average Enrollment: 10

**Direct Energy Conversion**

Instructor: Springer, R.  
(716) 831-5472  
Course Number: HUE 570  
Department: Engineering Science  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Energy Conversion; Photovoltaics; Elec'l Generation, Small Scale  
Number of Times Taught: 10  
Average Enrollment: 8

**Electrophysics Laboratory I**

Instructor: Malone, D.  
(716) 636-2422  
Course Number: EE 557  
Department: Electrical Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Laboratory: 45  
Topics Covered Extensively: Energy Conversion; Photovoltaics

New York

Solar Energy Research Institute

**Electrophysics Laboratory II**

Instructor: Malone, D.  
(716) 636-2422  
Course Number: EE 558  
Department: Electrical Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Laboratory: 45  
Topics Covered Extensively: Energy Conversion; Photovoltaics

**Energy Engineering I**

Instructor: Springer, R.  
(716) 831-5472  
Course Number: ENS 410/510  
Department: Engineering Science  
Credits: 4  
Student Level: Junior or Senior  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 60  
Topics Covered Extensively: Alternate Energy Sources; Energy Storage  
Number of Times Taught: 5  
Average Enrollment: 25

**Energy Engineering II**

Instructor: Springer, R.  
(716) 831-5472  
Course Number: ENS 411/530  
Department: Engineering Science  
Credits: 4  
Student Level: Junior or Senior  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Laboratory: 60  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Elec'l Generation, Central; Elec'l Generation, Small Scale  
Number of Times Taught: 5  
Average Enrollment: 10

**Energy Systems I**

Instructor: Gebhardt, B.  
(716) 636-2593  
Course Number: ME 431  
Department: Mechanical Engineering  
Credits: 4  
Student Level: Junior or Senior  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 60  
Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer; Elec'l Generation, Central

**Energy Systems II**

Instructor: Gebhardt, B.  
(716) 636-2593  
Course Number: ME 432  
Department: Mechanical Engineering  
Credits: 4  
Student Level: Junior or Senior  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 60  
Topics Covered Extensively: Energy

Conversion; Heat and Energy Transfer; Elec'l Generation, Central

**Environmental Heat & Mass Transfer**

Instructor: Gebhardt, B.  
(716) 636-2593  
Course Number: ME 568  
Department: Mechanical Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer

**Heat and Mass Transport**

Instructor: Springer, R.  
(716) 831-5472  
Course Number: ENS 302  
Department: Engineering Science  
Credits: 4  
Student Level: Junior or Senior  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 30  
Laboratory: 30  
Topics Covered Extensively: Heat and Energy Transfer  
Number of Times Taught: 15  
Average Enrollment: 25

**Heat Transfer I**

Instructor: Gebhardt, B.  
(716) 636-2593  
Course Number: ME 545  
Department: Mechanical Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Solar Collector Evaluation/Design

**Heat Transfer II**

Instructor: Gebhardt, B.  
(716) 636-2593  
Course Number: ME 546  
Department: Mechanical Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Solar Collector Evaluation/Design

**Physical Electronics**

Instructor: Malone, D.  
(716) 636-2422  
Course Number: EE350  
Department: Electrical Engineering  
Credits: 4  
Student Level: Junior or Senior

**1978-79 National Solar Energy Education Directory**

New York

Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Energy Conversion; Photovoltaics

**Radiation Heat Transfer**

Instructor: Gebhardt, B.  
 Course Number: ME 547  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer

**Semi-Conductor Electronics**

Instructor: Malone, D.  
 Course Number: EE 464  
 Department: Electrical Engineering  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 60  
 Topics Covered Extensively: Energy Conversion; Photovoltaics

**Semi-Conductors I**

Instructor: Malone, D.  
 Course Number: EE 563  
 Department: Electrical Engineering  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 60  
 Topics Covered Extensively: Energy Conversion; Photovoltaics

**Semi-Conductors II**

Instructor: Malone, D.  
 Course Number: EE 564  
 Department: Electrical Engineering  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 60  
 Topics Covered Extensively: Energy Conversion; Photovoltaics

**Solar Energy Engineering**

Instructor: Springer, R.  
 Course Number: ENS 463/552  
 Department: Engineering Science  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 4.0 hrs per week  
 Contact Hours: 60  
 Classroom: 60  
 Topics Covered Extensively: Energy

Storage; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Elec'l Generation; Small Scale Space Heating; Space Cooling  
 Number of Times Taught: 5  
 Average Enrollment: 5

**Solid-State Electrical Engineering I**

Instructor: Malone, D.  
 Course Number: EE 554  
 Department: Electrical Engineering  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Energy Conversion; Photovoltaics

**Solid-State Electrical Engineering II**

Instructor: Malone, D.  
 Course Number: EE 555  
 Department: Electrical Engineering  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Energy Conversion; Photovoltaics

**Solid-State Optical Devices**

Instructor: Malone, D.  
 Course Number: EE 656  
 Department: Electrical Engineering  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Energy Conversion; Photovoltaics

**Transport Phenomena in Chem. Engin II**

Instructor: Ulbrecht, J.  
 Course Number: CHE 510  
 Department: Chemical Engineering  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Energy Convection; Heat and Energy Transfer  
 Number of Times Taught: 10

**Transport Phenomena in Chemical Engineering I**

Instructor: Ulbrecht, J.  
 Course Number: CHE 509  
 Department: Chemical Engineering  
 Credits: 3

New York

Solar Energy Research Institute

Student Level: College Graduate  
Duration: 15 Weeks; 30 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer  
Number of Times Taught: 10

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Energy Sources; Biomass Conversion;  
Energy Conservation

SUNY AT STONY BROOK MAIN CAM (2838)  
STONY BROOK, New York 11794  
(516) 246-5000

SOLAR RELATED COURSES

Energy and the Environment 110  
Instructor: Lee, L. L.  
(516) 246-6102  
Course Number: PHY 110  
Department: Physics  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conversion; Heat and Energy Transfer  
Number of Times Taught: 10  
Average Enrollment: 25

Energy and the Environment 549

Instructor: Fox, David  
(516) 246-6106  
Course Number: CEN 549  
Department: Physics  
Credits: 3  
Student Level: College Graduate  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 42  
Classroom: 42  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy  
Number of Times Taught: 8  
Average Enrollment: 45

SUNY C. ENVNRMTL SCI- FORESTRY (2851)  
SYRACUSE, New York 13210  
(315) 473-6611

SOLAR RELATED COURSES

Energy Production and Conservation  
Instructor: Palmer, David G.  
(315) 473-8786  
Course Number: ERE611  
Department: Environmental and Resource Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Topics Covered Extensively: Alternate

SUNY COLLEGE AT BROCKPORT  
BROCKPORT, New York 14420  
(716) 395-2211

(2841)

SOLAR RELATED COURSES

Solar Energy  
Instructor: Greer, Ira W.  
(716) 395-2636  
Course Number: ESC 425  
Department: Earth Sciences  
Credits: 1  
Student level: Junior or Senior  
Duration: 8 Weeks, 2.0 hrs per week  
Contact Hours: 16  
Classroom: 16  
Topics Covered Extensively: Energy Storage; Intro. to Solar Energy; Solar System Components; Domestic Hot Water; Space Heating  
Number of Times Taught: 3  
Average Enrollment: 50

SUNY COLLEGE AT FREDONIA (2844)  
FREDONIA, New York 14063  
(716) 673-3111

SOLAR RELATED COURSES

Energy & Man  
Instructor: Connellly, John J.  
(716) 673-3305  
Course Number: PH103  
Department: Physics  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation  
Number of Times Taught: 12

SUNY COLLEGE AT GENESSEE (2845)  
GENESEO, New York 14454  
(716) 245-5211

SOLAR RELATED COURSES

Ener. Ed. Workshop/Solar Energy  
Instructor: Kinsey, K. F.  
(716) 245-5283  
Course Number: INT 979  
Department: Physics  
Credits: 4  
Student Level: College Graduate  
Duration: 1 Weeks, 15.0 hrs per week  
Contact Hours: 15

1978-79 National Solar Energy Education Directory

New York

Number of Times Taught: 2  
Average Enrollment: 15

SUNY COLLEGE AT OSWEGO (2848)  
OSWEGO, New York 13126  
(315) 341-2500

**SOLAR RELATED COURSES**

*Ener. Tech., Eff. Res. Fuel Util.*  
Instructor: Hinrichs, R./Salvagin, C.  
Department: Phys/Earth Sci/Indus. Arts  
Credits: 3  
Student Level: All levels  
Duration: 6 Weeks, 6.7 hrs per week  
Contact Hours: 40  
Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design

*Energy From Nature to Man*  
Instructor: Hinrichs, R.  
(315) 341-2388  
Course Number: 105  
Department: Physics  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 8  
Average Enrollment: 40

*Energy Technologies & Efficient Res. Fuel Utilization*  
Instructor: Schneider, Raymond  
(315) 341-4252  
Course Number: ES 315-515  
Department: Earth Sciences and Industrial Arts  
Credits: 3  
Student Level: All levels  
Duration: 6 Weeks, 6.5 hrs per week  
Contact Hours: 39  
Classroom: 39  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling;

*Wind Power, Small Systems*  
Number of Times Taught: 1  
Average Enrollment: 48

*Thermodynamics and Applications*  
Instructor: Hinrichs, R.  
(315) 341-2388  
Course Number: 340  
Department: Physics  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Heat and Energy Transfer; Space Heating  
Number of Times Taught: 3  
Average Enrollment: 30

*Using Solar Energy for Res. Heating*  
Instructor: Gerbracht, Carlton  
(315) 341-3028  
Course Number: CE 380  
Department: Industrial Arts  
Student Level: College Graduate  
Duration: 4 Weeks, 1.5 hrs per week  
Contact Hours: 6  
Classroom: 6  
Topics Covered Extensively: Intro. to Solar Energy; Solar Systems Installation  
Number of Times Taught: 2  
Average Enrollment: 40

SUNY COLLEGE PLATTSBURGH (2849)  
PLATTSBURGH, New York 12901  
(518) 564-2000

**PROGRAMS AND CURRICULA**

*Environmental Sci. (Alternate Energy)*  
Degree: BA, Environmental Science  
Contact: Dawson, James C.  
(518) 564-2178  
Students Taking or Completing Offering:  
Contractor, Do-it-yourself Homeowner, Solar Technician

**SOLAR RELATED COURSES**

*Energy Systems*  
Instructor: Kissner, Fritz  
(518) 564-2178  
Course Number: ENR 309  
Department: Institute for Man and Environment  
Program or Curriculum: Environmental Sci. (Alternate Energy)  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology;

New York

Solar Energy Research Institute

Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Energy Policy Development; Solar System Components  
Number of Times Taught: 6  
Average Enrollment: 60

*Energy-Resources and Conservation*

Instructor: Barnett, S. G.  
(518) 564-3107  
Course Number: GEL 385  
Department: Earth Sciences  
Program or Curriculum: Environmental Sci.  
(Alternate Energy)  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Storage; Heat and Energy Transfer  
Number of Times Taught: 6  
Average Enrollment: 40

*Residential Research Semester*

Instructor: Dawson, James C.  
(518) 564-2178  
Course Number: ENV 313-318  
Department: Institute for Man and Environment  
Program or Curriculum: Environmental Sci.  
(Alternate Energy)  
Credits: 15  
Student Level: Junior or Senior  
Duration: 15 Weeks, 45.0 hrs per week  
Contact Hours: 675  
Classroom: 75  
Laboratory: 600  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Conversion; Plumbing Techniques; Sheet Metal Techniques; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 3  
Average Enrollment: 35

*Solar Energy*

Instructor: Szydlik, Paul  
(518) 564-2648  
Course Number: PHY 301  
Department: Physics  
Program or Curriculum: Environmental Sci.  
(Alternate Energy)  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer

Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water  
Number of Times Taught: 3  
Average Enrollment: 15

SYRACUSE U. MAIN CAMPUS

(2882)

SYRACUSE, New York 13210

(315) 423-1870

SOLAR RELATED COURSES

*Solar Energy Applications*  
Instructor: LaGraff, John E.  
(315) 423-4366  
Course Number: MEE 587  
Department: Mechanical and Aerospace Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Topics Covered Extensively: Intro. to Solar Energy; Solar Collector Evaluation/Design; Space Heating  
Number of Times Taught: 3  
Average Enrollment: 30

UNION COLLEGE

(2889)

SCHENECTADY, New York 12308  
(518) 370-6000

SOLAR RELATED COURSES

*Solar Energy Analysis and Design*  
Instructor: Aubrey, William C.  
(518) 370-6266  
Course Number: ME 144  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.3 hrs per week  
Contact Hours: 33  
Classroom: 33  
Topics Covered Extensively: Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Space Cooling

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New York

**US MERCHANT MARINE ACADEMY** (2892)  
KINGS POINT, NEW YORK, New York 11024  
(516) 482-8200

**SOLAR RELATED COURSES**

**Physics of Solar Energy**  
Instructor: Drago, P.  
Course Number: M436  
Department: Mathematics and Science  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 27  
Laboratory: 3  
Topics Covered Extensively: Heat and Energy Transfer; Solar Collector Evaluation/Design; Domestic Hot Water  
Number of Times Taught: 3  
Average Enrollment: 35

**VASSAR COLLEGE** (2895)  
POUGHKEEPSIE, New York 12601  
(914) 452-7000

**SOLAR RELATED COURSES**

**Environmental Physics**  
Instructor: Stearns, R.L.  
Course Number: 102  
Department: Physics  
Credits: 3  
Student Level: All Levels  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Classroom: 39  
Number of Times Taught: 5  
Average Enrollment: 20

**Community/Junior Colleges**

**ADIRONDACK CHTY COLLEGE** (2860)  
GLENS FALLS, New York 12801  
(518) 793-6491

**PROGRAMS AND CURRICULA**

**Seminar in Solar Energy**  
Degree: Heating Certificate  
Contact: Harrington, Charles  
(518) 747-0274  
Students Taking or Completing Offering:  
Solar Technician

**SOLAR RELATED COURSES**

**Seminar in Solar Energy**  
Instructor: Harrington, Charles  
(518) 747-0274  
Course Number: TECH 191  
Department: Occ. Ed.  
Program or Curriculum: Seminar in Solar Energy  
Credits: 3  
Student Level: All levels  
Duration: 17 Weeks, 6.0 hrs per week  
Contact Hours: 102  
Classroom: 51  
Laboratory: 51  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collection Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling  
Number of Times Taught: 5  
Average Enrollment: 25

**CAYUGA CO CHTY COLLEGE** (2861)  
AUBURN, New York 13021  
(315) 253-7345

**PROGRAMS AND CURRICULA**

**Solar Energy Technology**  
Degree: Solar Energy Technology  
Contact: Kornaneky, William  
(315) 253-7345  
Students Taking or Completing Offering:  
Do-it-yourself Homeowner, Electrician, Plumber

**SOLAR RELATED COURSES**

**Solar Heating Energy**  
Instructor: Simkin, Robert  
(315) 364-8065  
Department: Science  
Program or Curriculum: Solar Energy Technology  
Credits: 3  
Student Level: All levels  
Duration: 5 Weeks, 3.0 hrs per week  
Contact Hours: 15  
Classroom: 15  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Space Heating  
Number of Times Taught: 2  
Average Enrollment: 23

New York

Solar Energy Research Institute

COLUMBIA-GREEHE CC  
HUDSON, New York 12534  
(518) 828-4181

(6789)

SOLAR RELATED COURSES

Solar Energy

Instructor: Drum, Donald A.  
(518) 828-4181

Course Number: CE 005  
Department: Continuing Education  
Student Level: All levels  
Duration: 10 Weeks, 2.0 hrs per week

Contact Hours: 20  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling

Number of Times Taught: 3

Average Enrollment: 71.

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CUNY NEW YORK CITY CC (2696)  
BROOKLYN, New York 11201  
(212) 643-4033

PROGRAMS AND CURRICULA

Environmental Control Technology

Degree: AD, Applied Science  
Contact: Lomack, Samuel  
(212) 962-0407

SOLAR RELATED COURSES

Environmental Design I

Instructor: Farkas, Stanley  
(212) 239-1662  
Course Number: EC 110  
Department: Environmental Control Technology  
Program or Curriculum: Environmental Control Technology  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Energy Conservation; Heat and Energy Transfer  
Number of Times Taught: 70  
Average Enrollment: 25

Environmental Design Laboratory

Instructor: Farkas, Stanley  
(212) 239-1662  
Course Number: EC111  
Department: Environmental Control Technology  
Program or Curriculum: Environmental Control Technology

Credits: 1  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 3  
Topics Covered Extensively: Plumbing Techniques  
Average Enrollment: 20

Environmental System Design

Instructor: Finger, A.  
(212) 239-1658  
Course Number: EC 430  
Department: Environmental Control Technology

Program or Curriculum: Environmental Control Technology  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 6.0 hrs per week  
Contact Hours: 90  
Classroom: 30  
Laboratory: 60  
Number of Times Taught: 16  
Average Enrollment: 18

Hydronic Systems Design

Instructor: Pita, Edward  
(212) 239-1662  
Course Number: EC220  
Department: Environmental Control Technology

Program or Curriculum: Environmental Control Technology  
Credits: 3  
Student Level: High School Graduate  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 40  
Topics Covered Extensively: Heat and Energy Transfer  
Number of Times Taught: 24  
Average Enrollment: 25

Refrigeration II

Instructor: Lomack  
(212) 239-1696  
Course Number: EC410  
Department: Environmental Control Technology

Program or Curriculum: Environmental Control Technology  
Credits: 2  
Student Level: Junior or Senior  
Duration: 15 Weeks, 2.0 hrs per week  
Contact Hours: 30  
Topics Covered Extensively: Energy Conservation; Energy Storage; Heat and Energy Transfer  
Number of Times Taught: 16  
Average Enrollment: 25

Sum. Inst.-Ener. Ed. (Sec. Sch. Teach.)

Instructor: Lomack, S.  
(212) 962-0407  
Department: Environmental Con. Tech. & Cont. Edu.

**1978-79 National Solar Energy Education Directory**

New York

Student Level: College Graduate.  
Duration: 3 Weeks, 30.0 hrs per week  
Contact Hours: 90  
Classroom: 80  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology  
Average Enrollment: 80

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**GENESEE COMMUNITY COLLEGE** (6782)  
BATAVIA, New York 14020  
(716) 343-0055

**SOLAR RELATED COURSES**

**Solar Energy**  
Instructor: Cole, Ronald J.  
(716) 343-0055  
Course Number: 192  
Department: Math-Science  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 37  
Laboratory: 23  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar Economics; Solar Home Construction; Domestic Hot Water; Swimming Pool Heating; Space Heating; Wind Power, Central Systems; Wind Power, Small Systems  
Number of Times Taught: 1  
Average Enrollment: 26

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**MONAUK VLY CMTY COLLEGE** (2871)  
UTICA, New York 13501  
(315) 792-5500

**PROGRAMS AND CURRICULA**

**Solar Energy Technology**  
Degree: Solar Energy Technology  
Contact: Dunning, Francis  
(315) 792-5514

**SOLAR RELATED COURSES**

**Solar Energy I-Ener. and Ener. Cons.**  
Instructor: Dunning, Francis  
(315) 792-5514  
Course Number: CC530  
Department: Physics and Engineering Science  
Program or Curriculum: Solar Energy Technology  
Credits: 3  
Student Level: All levels

Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Systems Installation; Domestic Hot Water; Space Heating  
Number of Times Taught: 5  
Average Enrollment: 30

**Solar Energy II (Installation)**  
Instructor: Dunning, Francis  
(315) 792-5514  
Course Number: D2986  
Department: Physics  
Program or Curriculum: Solar Energy Technology  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 5.0 hrs per week  
Contact Hours: 50  
Classroom: 30  
Laboratory: 20  
Topics Covered Extensively: Appropriate Technology; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 30

**Solar III (Sol. Ener. Sys. Des. and Ana.)**

Instructor: Dunning, Francis  
(315) 792-5514  
Department: Physics  
Program or Curriculum: Solar Energy Technology  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 5.0 hrs per week  
Contact Hours: 50  
Classroom: 30  
Laboratory: 20  
Topics Covered Extensively: Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Materials Research; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

**Solar IV (Alternate Energy Sources)**

Instructor: Dunning, Francis  
(315) 792-5514  
Department: Physics  
Program or

New York

Solar Energy Research Institute

Curriculum: Solar Energy Technology  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 5.0 hrs per week  
Contact Hours: 50  
Classroom: 30  
Laboratory: 20  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar Economics; Solar Law/Legislation; Process Heat; Agricultural; Wind Power, Central Systems; Wind Power, Small Systems

Solar System Fabrication I

Instructor: Dunning, Francis (315) 792-5514  
Department: Physics  
Program or Curriculum: Solar Energy Technology  
Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 10  
Laboratory: 20  
Topics Covered Extensively: Appropriate Technology; Plumbing Techniques; Sheet Metal Techniques; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling

Solar System Fabrication II

Instructor: Dunning, Francis (315) 792-5514  
Department: Physics  
Program or Curriculum: Solar Energy Technology  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 7.0 hrs per week  
Contact Hours: 70  
Classroom: 10  
Laboratory: 60  
Topics Covered Extensively: Appropriate Technology; Plumbing Techniques; Sheet Metal Techniques; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling

MONROE COMMUNITY COLLEGE  
ROCHESTER, New York 14623  
(716) 442-9950

SOLAR RELATED COURSES

Alternative Sources of Energy  
Instructor: Dowd, Janis (716) 275-9318  
Course Number: CEC 036-181

Department: Community Services

Student level: All levels  
Duration: 8 Weeks, 1.0 hrs per week  
Contact Hours: 8  
Classroom: 8  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design  
Number of Times Taught: 3  
Average Enrollment: 40

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ORANGE CO CMY COLLEGE  
MIDDLETON, New York 10940  
(914) 343-1121

(2876)

SOLAR RELATED COURSES

Design of Solar Energy Systems

Instructor: Large, George (914) 343-1121  
Department: Physical Sciences  
Student Level: College Graduate  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Space Cooling  
Number of Times Taught: 2  
Average Enrollment: 25

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ROCKLAND CMY COLLEGE  
SUFLERN, New York 10901  
(914) 356-4650

(2877)

SOLAR RELATED COURSES

Solar Energy - Its use in the 1970's

Instructor: Cataldo, Ronald (914) 356-1527  
Course Number: CF 189  
Department: Continuing Ed. and Community Service  
Student Level: High School Graduate  
Duration: 10 Weeks, 2.0 hrs per week  
Contact Hours: 20  
Number of Times Taught: 2  
Average Enrollment: 20

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SUNY AGRL & TECH C CANTON  
CANTON, New York 13617  
(315) 386-7204

(2855)

## SOLAR RELATED COURSES:

*Practical Applications of Solar Energy*  
Instructor: Emhof, Carson  
Course Number: 30302  
Department: Engr. Tech. Division  
Credits: 2  
Student Level: High School Graduate  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Number of Times Taught: 3  
Average Enrollment: 40

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SUNY AGRL & TECH C DELHI  
DELHI, New York 13753  
(607) 746-4111

(2857)

## PROGRAMS AND CURRICULA

*Construction Tech./Civil Tech.*  
Degree: AD Applied Science  
Contact: Duncan, George  
(607) 746-4205

*Students Taking or Completing Offering:*  
Mechanical or Electrical Contractor,  
Contractor, Other

## SOLAR RELATED COURSES

*General Chemistry*  
Instructor: Onasch, Frederick  
Course Number: 9512  
Department: Physical Sciences  
Program or Curriculum: Construction Tech./Civil Tech.  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 5.0 hrs per week  
Contact Hours: 75  
Classroom: 30  
Laboratory: 45  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conversions; Energy Storage; Heat and Energy Transfer; Materials Research; Photovoltaics

*General Chemistry 9513*  
Instructor: Onasch, Frederick  
Course Number: 9513  
Department: Physical Sciences  
Program or Curriculum: Construction Tech./Civil Tech.  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 5.0 hrs per week

Contact Hours: 75

Classroom: 30

Laboratory: 45

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conversions; Energy Storage; Heat and Energy Transfer; Materials Research; Photovoltaics

## General Physics

Instructor: Vetter, Willard  
(607) 746-4374  
Course Number: 9521  
Department: Physical Sciences  
Program or Curriculum: Construction Tech./Civil Tech.  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 30  
Laboratory: 30  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy  
Average Enrollment: 100

## General Physics 9522

Instructor: Vetter, Willard  
(607) 746-4374  
Course Number: 9522  
Department: Physical Sciences  
Program or Curriculum: Construction Tech./Civil Tech.  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 30  
Laboratory: 30  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy  
Average Enrollment: 100

## Mechanical Equipment for Buildings

Instructor: Hampel, John  
(607) 746-4386  
Course Number: 3741  
Department: Construction Technology  
Program or Curriculum: Construction Tech./Civil Tech.  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 45  
Laboratory: 30  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Plumbing Techniques

Number of Times Taught: 20  
 Average Enrollment: 65

## Thermodynamics and Heating

Instructor: Harpel, John  
 Course Number: (607) 746-4386

Course Number: 3711  
 Department: Construction Tech.

Program or Curriculum: Construction Tech.

Credits: Civil Tech. 4

Student Level: Freshman or Sophomore

Duration: 115 Weeks, 4.0 hrs per week

Contact Hours: 60

Classroom: 45

Laboratory: 30

Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Plumbing Techniques

Number of Times Taught: 20

Average Enrollment: 65

## Water Resources

Instructor: Singer, Darrell  
 Course Number: (607) 746-4391

Course Number: 3554  
 Department: Civil Technology

Program or Curriculum: Construction Tech.

Credits: Civil Tech. 4

Student Level: Freshman or Sophomore

Duration: 15 Weeks, 6.0 hrs per week

Contact Hours: 90

Classroom: 30

Laboratory: 60

Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage

Number of Times Taught: 20

Average Enrollment: 30

TOMPKINS-CORTLAND CC  
 DRYDEN, New York 13053  
 (607) 844-8211

(6788)

## SOLAR RELATED COURSES

## Home Use of the Sun's Energy

Instructor: Klein, Gary  
 Course Number: (607) 844-8211

Course Number: CEET 708

Department: Lifelong Learning

Student Level: All Levels

Duration: 8 Weeks, 3.0 hrs per week

Contact Hours: 24

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Intro. to Solar Energy; Solar System Components; Solar Systems Installation

Number of Times Taught: 3

Average Enrollment: 14

WESTCHESTER CHTY COLLEGE  
 VALHALLA, New York 10595

(2881)

## SOLAR RELATED COURSES

## Alternate Energy Resources &amp; Lab.

Instructor: Lee, Diana  
 Course Number: (914) 347-6930

Course Number: 190-172-3

Department: Physical Science

Credits: 4

Student Level: Freshman or Sophomore

Duration: 45 Weeks, 5.0 hrs per week

Contact Hours: 45

Classroom: 45

Laboratory: 30

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components

## Solar Heating and Energy Cons.

Instructor: Hojan, C.  
 Course Number: (914) 347-6930

Department: Mechanical Technology

Student Level: All levels

Duration: 6 Weeks, 2.0 hrs per week

Contact Hours: 12

Classroom: 12

Topics Covered Extensively: Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar System Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling

Number of Times Taught: 1

Average Enrollment: 13

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## Other Educational Institutions

ALAA PROFESSIONAL STUDY SERIES  
 1290 Avenue of the Americas  
 NY, New York 10020

(90500)

## SOLAR RELATED COURSES

## Wind Engineering

Instructor: Sforza, Pauline  
 Course Number: (212) 581-4300

Duration: 20 Days

Topics Covered Extensively: Wind Power,  
Central Systems; Wind Power; Small  
Systems

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**AMERICAN SOCIETY OF MECHANICAL  
ENGINEERING**

345 E. 47th St.  
NY, New York 10017  
(212) 644-7743

**PROGRAMS AND CURRICULA**

\*Professional Development  
(212) 644-7743

**SOLAR RELATED COURSES**

\*Short Courses

Program or  
Curriculum      \*Professional  
Development

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**BROOME-DELWARE-TIoga BOLES**

Ed. Center, Upper Glenwood Rd.  
Binghamton, New York 13905

**SOLAR RELATED COURSES**

\*Solar Training in Electronics Course

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**MASSAU COUNTY BOLES**

Valentines Rd. & The Plains Rd.  
Westbury, New York 11590

**SOLAR RELATED COURSES**

\*Sol. Ener. Tech. in Heat. A/C Courses

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**NY INST TECHN MAIN CAMPUS**

OLD WESTBURY, New York 11568  
(516) 685-7516

(4804)

**SOLAR RELATED COURSES**

*Special Studies in Architecture*  
Instructor: Wilkie, Douglas  
(516) 759-9050

Course Number: 6201

Department: Architecture

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Topics Covered Extensively: Appropriate  
Technologies; Biomass Conversion; Energy  
Conservation; Energy Conversion; Energy  
Storage; Heat and Energy Transfer;  
Intro. to Solar Energy; Plumbing

Techniques; Solar Home Construction;  
Solar Collector Evaluation/Design;  
Solar Systems Design; Domestic Hot  
Water; Space Heating  
Number of Times Taught: 4  
Average Enrollment: 30

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**SARATOGA-HARREN-BOCES-MYERS OCC. CHT.** (90470)

Hunting Rd.  
Saratoga Springs, New York 12866

**SOLAR RELATED COURSES**

\*Sol. Ener. Tech. in Heat. A/C Courses

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## North Carolina

## Solar Energy Research Institute

## Colleges/Universities

**APPALACHIAN ST UNIVERSITY**  
BOONE, North Carolina 28608  
(704) 262-2000

## SOLAR RELATED COURSES

*Solar Energy for Homes*

Instructor: Mamola, Carl C.  
(704) 262-3090  
Course Number: 3530  
Department: Physics  
Credits: 3  
Student Level: All levels  
Duration: 8 Weeks, 2.07 hrs per week  
Contact Hours: 16  
Classroom: 16

Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 2  
Average Enrollment: 90

**DUKE UNIVERSITY**  
DURHAM, North Carolina 27706  
(919) 684-8111

## PROGRAMS AND CURRICULA

*Energy Conservation*

Degree: MS Civil, Electrical,  
Mechanical Engineering  
Contact: Chaddock, Jack B.  
(919) 684-2832

## SOLAR RELATED COURSES

*Materials Science and Energy Technology*

Instructor: Shepard, Marion L.  
(919) 684-2832  
Course Number: ME 113  
Department: Engineering  
Program or Curriculum: Energy Conservation  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Intro. to Solar Energy; Materials Research; Photovoltaics  
Number of Times Taught: 4  
Average Enrollment: 12

*Solar Electric Power Systems*

Instructor: Waga, Paul P.  
(919) 684-3123  
Course Number: EE 155  
Department: Engineering  
Program or Curriculum: Energy Conservation

Credits: 3

Student Level: Junior or Senior

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Classroom: 42

Topics Covered Extensively: Intro. to Solar Energy; Photovoltaics; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Elec'l Generation, Central; Elec'l Generation, Small Scale; Wind Power, Central Systems; Wind Power, Small Systems

Number of Times Taught: 2

Average Enrollment: 7

*Solar Energy Thermal Processes*

Instructor: Chaddock, Jack B.  
(919) 684-2832

Course Number: ME 254

Department: Engineering

Program or Curriculum: Energy Conservation

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling

Number of Times Taught: 10

Average Enrollment: 10

**EAST CAROLINA UNIVERSITY**

GREENVILLE, North Carolina 27834

(919) 757-6212

## SOLAR RELATED COURSES

*Solar Energy*

Instructor: Adley, Carl/ Byrd, William  
(919) 757-6739

Course Number: 5640

Department: Physics

Credits: 3

Student Level: Junior or Senior

Duration: 14 Weeks, 4.0 hrs per week

Contact Hours: 56

Classroom: 28

Laboratory: 28

Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Photovoltaics; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating

Number of Times Taught: 2

Average Enrollment: 20

NC AGRL & TECH STATE U  
GREENSBORO, North Carolina 27411  
(919) 379-7500

## SOLAR RELATED COURSES

## Energy Conversion

Instructor: Klett, D. E.  
(919) 379-7620  
Course Number: 563  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45.  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 15

## Solid State Energy Conversion

Instructor: Stefanakos, E. K.  
(919) 379-7761  
Course Number: 608  
Department: Electrical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 12 Weeks, 3.0 hrs per week  
Contact Hours: 36  
Classroom: 36  
Topics Covered Extensively: Intro. to Solar Energy; Photovoltaics; Solar Systems Design; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 10

NC AT ASHEVILLE U OF  
ASHEVILLE, North Carolina 28804  
(704) 258-0200

## SOLAR RELATED COURSES

Design of Solar Heated Homes  
Instructor: Cole, Robert S.  
(704) 258-0200  
Course Number: PHY 272  
Department: Physics  
Credits: 2  
Student Level: All levels  
Duration: 16 Weeks, 2.0 hrs per week  
Contact Hours: 32  
Classroom: 32  
Topics Covered Extensively: Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Economics; Solar Home Construction;

Solar Collector Evaluation/Design;  
Solar Systems Design; Domestic Hot Water

Number of Times Taught: 4  
Average Enrollment: 60

## Passive Solar Systems

Instructor: Cole, Robert S.  
(704) 258-0200  
Department: Physics  
Credits: 2  
Student Level: All levels  
Duration: 16 Weeks, 2.0 hrs per week  
Contact Hours: 32  
Topics Covered Extensively: Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction

NC AT CHARLOTTE, U OF  
CHARLOTTE, North Carolina 28223  
(704) 597-2000

## SOLAR RELATED COURSES

\*Energy Conversion I  
(704) 597-2301  
Course Number: ESM412  
Department: Engineering  
Topics Covered Extensively: Energy Conservation

\*Energy Conversion II  
(704) 597-2301  
Course Number: ESM413  
Department: Engineering  
Topics Covered Extensively: Energy Conversion; Photovoltaics

\*Heating & Air Conditioning  
(704) 597-2301  
Course Number: MET441  
Topics Covered Extensively: Solar System Components; Space Heating; Space Cooling

NC AT GREENSBORO, U OF /  
GREENSBORO, North Carolina 27412  
(919) 379-5000

## SOLAR RELATED COURSES

Energy Options and the Environment  
Instructor: Neisher, Gerald W.  
(919) 379-5330  
Course Number: PHYS. 334  
Department: Arts and Sciences/Physics  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation;

**North Carolina****Solar Energy Research Institute**

**Passive Solar Technology**  
 Number of Times Taught: 10  
 Average Enrollment: 25

Credits: 3  
 Student Level: College Graduate  
 Duration: 1 Weeks, 40.0 hrs per week  
 Contact Hours: 40  
 Classroom: 30  
 Laboratory: 10

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Domestic Hot Water

**NC STATE U RALEIGH** (2972)  
 RALEIGH, North Carolina 27607  
 (919) 737-2011

**SOLAR RELATED COURSES**

**Energy Conservation Techniques**  
 Instructor: Barnes, Donald  
 (919) 737-2203  
 Course Number: ARC 592-G  
 Department: Architecture  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48  
 Topics Covered Extensively: Energy Conservation; Energy Storage; Passive Solar Technology; Solar Home Construction; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 20

**Community/Junior Colleges**

**CARTERET TECHNICAL INST.** (8081)  
 MOREHEAD CITY, North Carolina 28557  
 (919) 726-2811

**PROGRAMS AND CURRICULA**

**Solar Energy: Fundamentals and Construction**  
 Degree: Institute Certificate  
 Contact: Nelson, J. Lenn  
 (919) 726-1171  
 Students Taking or Completing Offering:  
 Do-it-yourself Homeowner

**Energy Conversion in Bio. Systems**  
 Instructor: Suggs, Charles W.  
 (919) 737-3101  
 Course Number: BAE 303  
 Department: Biological and Agricultural Engineering  
 Credits: 2  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 2.0 hrs per week  
 Contact Hours: 30  
 Classroom: 30  
 Average Enrollment: 18

**WEST CAROLINA UNIVERSITY** (2981)  
 CULLOWHEE, North Carolina 28723  
 (704) 293-7211

**PROGRAMS AND CURRICULA**

**Faculty Dev. in Ener. for Ind. Eds.**  
 Degree: MS, BS  
 Contact: Cook, J./Dalley, R.  
 (704) 227-7368

**Students Taking or Completing Offering:**  
 Educator

**SOLAR RELATED COURSES**

**Faculty Dev. in Ener. for Ind. Eds.**  
 Instructor: Cook, J./Dalley, R.  
 (704) 227-7368  
 Department: Industrial Education & Technology  
 Program or Curriculum: Faculty Dev. in Ener. for Ind. Eds.

**SOLAR RELATED COURSES**

**Solar Energy: Fundamentals and Construction**  
 Instructor: Whitehurst, Brooks  
 (919) 726-1171  
 Course Number: FIS 3031D  
 Department: Community Services  
 Program or Curriculum: Fundamentals and Construction  
 Student Level: High School Graduate  
 Duration: 9 Weeks, 3.0 hrs per week  
 Contact Hours: 27  
 Classroom: 9  
 Laboratory: 18  
 Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water  
 Number of Times Taught: 5  
 Average Enrollment: 18

1978-79 National Solar Energy Education Directory

North Carolina

CBB PIEDMONT CITY COLLEGE  
CHARLOTTE, North Carolina 28204  
(704) 373-6566

(2915)

SOLAR RELATED COURSES

*Applied Solar Energy*

Instructor: Farkas, Al  
Course Number: (704) 373-6633  
Department: ARC-4310  
Technology-Arch.Tech.Pr  
os.  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 11 Weeks, 3.0 hrs per week  
Contact Hours: 33  
Classroom: 33  
Topics Covered Extensively: Alternate  
Energy Sources; Energy Conservation;  
Energy Storage; Heat and Energy  
Transfer; Intro. to Solar Energy;  
Passive Solar Technology;  
Photovoltaics; Solar System Components;  
Solar Economics; Solar Collector  
Evaluation/Design; Solar Systems Design  
Number of Times Taught: 15  
Average Enrollment: 12

GASTON COLLEGE

DALLAS, North Carolina 28034  
(704) 922-3136

(2973)

SOLAR RELATED COURSES

*Practical Solar Energy*

Instructor: McArver, Fred  
(704) 922-3136  
Department: Continuing Education  
Student Level: High School Graduate  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Number of Times Taught: 3  
Average Enrollment: 20

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COASTAL CAROLINA CC  
JACKSONVILLE, North Carolina 28540  
(919) 455-1221

(8084)

PROGRAMS AND CURRICULA

*Heat Pumps and Electives*

Degree: Heating, Air Conditioning and  
Refrigeration  
Contact: Rawls, Preston C.  
(919) 455-1221  
Students Taking or Completing Offering:  
Mechanical or Electrical Contractor,  
Do-it-yourself Homeowner

SOLAR RELATED COURSES

*Heat Pumps and Electives*

Instructor: Hewitt, Robert L.  
Course Number: (919) 455-1221  
Department: AHR 1130  
Occupational  
Program or  
Curriculum: Heat Pumps and  
Electives  
Student Level: All levels  
Duration: 11 Weeks, 9.0 hrs per week  
Contact Hours: 99  
Classroom: 33  
Laboratory: 66  
Topics Covered Extensively: Intro. to  
Solar Energy; Sheet Metal Techniques;  
Domestic Hot Water; Space Heating  
Number of Times Taught: 2  
Average Enrollment: 12

GUILFORD TECHNICAL INST

JAMESTOWN, North Carolina 27282  
(919) 292-1101

(4838)

SOLAR RELATED COURSES

*Solar Hot Water Systems*

Instructor: Eller, Wayne C.  
(919) 292-1101  
Course Number: 3EBF  
Department: Continuing Education  
Student Level: All levels  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 25  
Laboratory: 5  
Topics Covered Extensively: Energy  
Conservation; Energy Storage; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Plumbing Techniques; Solar  
Collector Evaluation/Design; Domestic  
Hot Water  
Number of Times Taught: 3  
Average Enrollment: 18

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JAMES SPRUNT INSTITUTE

KENANSVILLE, North Carolina 28349  
(919) 296-1341

(7687)

SOLAR RELATED COURSES

*Building and Trades*

Instructor: Smith, Prentice  
(919) 296-1341  
Department: Vocational Programs  
Credits: 5  
Student Level: High School Graduate  
Duration: 11 Weeks, 5.0 hrs per week  
Contact Hours: 55  
Classroom: 18  
Laboratory: 37  
Number of Times Taught: 4  
Average Enrollment: 45

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202

**SAMPSON TECHNICAL INST**  
CLINTON, North Carolina 28328  
(919) 592-8081

(7892)

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**PROGRAMS AND CURRICULA****Air Conditioning, Heating, and Refrig.**

- Degree: Diploma
- Contact: Peacock, Sherwood  
(919) 592-8081
- Students Taking or Completing Offering:  
Installer-Commercial (Solar System),  
Solar Technician

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**STANLY TECHNICAL INST**  
ALBEMARLE, North Carolina 28001  
(704) 982-0121

(11199)

**SOLAR RELATED COURSES****Solar Energy Systems**

- Instructor: Griffin, James E.  
(704) 463-5820
- Course Number: W970
- Student Level: All levels
- Number of Times Taught: 2
- Average Enrollment: 9

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**TRI-COUNTY TECHNICAL INST**  
MURPHY, North Carolina 28906  
(704) 837-6810

(9430)

**SOLAR RELATED COURSES****Solar Energy**

- Department: Continuing Ed.
- Student Level: All levels
- Contact Hours: 18
- Number of Times Taught: 2
- Average Enrollment: 15

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**VANCE-GRANVYL CMTY COLLEGE**  
HENDERSON, North Carolina 27536  
(919) 492-2061

(9903)

**SOLAR RELATED COURSES****Carpentry**

- Instructor: Norwood, Mike  
(919) 492-3371
- Course Number: 3001 W974
- Department: Occupational Education
- Student Level: All levels
- Duration: 5 Weeks, 3.0 hrs per week
- Contact Hours: 15
- Classroom: 15
- Topics Covered Extensively: Energy Conservation; Energy Conversion; Plumbing Techniques
- Number of Times Taught: 2
- Average Enrollment: 20

**Vocational/Technical Colleges**

**CAPE FEAR TECHNICAL INST**  
WILMINGTON, North Carolina 28401  
(919) 343-0481

(5320)

**PROGRAMS AND CURRICULA****General Occupational Technologies**

- Degree: AD, General Occupational Technologies
- Contact: Stiles, W. O./Averette, R.  
(919) 343-0481

**SOLAR RELATED COURSES****Introduction to Energy Resources**

- Instructor: Bordeaux, Ralph  
(919) 343-0481
- Course Number: T-EGY101
- Department: Engineering Division
- Program or Curriculum: General Occupational Technologies
- Credits: 3

- Student Level: All levels
- Duration: 11 Weeks, 3.0 hrs per week
- Contact Hours: 33
- Classroom: 33

- Topics Covered Extensively: Alternate Energy Sources; Energy Storage; Intro. to Solar Energy
- Number of Times Taught: 2
- Average Enrollment: 25

**Introduction to Solar Energy Systems (Elect.)**

- Instructor: Bordeaux, Ralph  
(919) 343-0481
- Course Number: T-EGY103
- Department: Engineering
- Program or Curriculum: General Occupational Technologies
- Credits: 5

- Student Level: All levels
- Duration: 11 Weeks, 6.0 hrs per week
- Contact Hours: 66
- Classroom: 44
- Laboratory: 22

- Topics Covered Extensively: Appropriate Technology; Photovoltaics; Solar Energy Policy Development; Elec'l Generation, Small Scale; Wind Power, Small Systems

**Introduction to Solar Energy Systems (Thermal)**

- Instructor: Stiles, Warren O.  
(919) 256-3146
- Course Number: T-EGY-102
- Department: G.O.T./Evening
- Program or Curriculum: General Occupational Technologies

## 1978-79 National Solar Energy Education Directory

North Carolina

Credits: 5

Student Level: All levels

Duration: 11 Weeks, 6.0 hrs per week

Contact Hours: 66

Classroom: 44

Laboratory: 82

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Economics; Solar Collector Evaluation/Design; Domestic Hot Water

CLEVELAND CO TECH INST

SHELBY, North Carolina 28150

(704) 482-8351

## SOLAR RELATED COURSES

## Resource Conservation

Instructor: Smith, Iverson  
(704) 482-8351

Department: Industrial Environmental Sciences

Credits: 4

Student Level: Freshman or Sophomore

Duration: 11 Weeks, 6.0 hrs per week

Contact Hours: 55

Classroom: 22

Laboratory: 33

PAMLICO TECHNICAL INST

GRANTSBORO, North Carolina 28529  
(919) 249-1851

## PROGRAMS AND CURRICULA

## Solar Energy

Degree: Certificate  
Contact: Prescott, Matthew  
(919) 249-1851

Students Taking or Completing Offering:  
Educator, Contractor, Do-it-yourself,  
Homeowner, Installer-Residential (Solar  
System), Solar Technician

## SOLAR RELATED COURSES

## Solar Energy

Instructor: Whitehurst, Brooks  
(919) 249-1851

Department: Continuing Ed.

Program or Curriculum: Solar Energy

Student Level: All levels

Duration: 4 Weeks, 11.0 hrs per week

Contact Hours: 44

Classroom: 11

Laboratory: 33

Topics Covered, Extensively: Solar  
Systems Installation; Domestic Hot  
Water

Number of Times Taught: 2

Average Enrollment: 18

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RANDOLPH TECHNICAL INST

ASHEBORO, North Carolina 27203

(919) 629-1471

## SOLAR RELATED COURSES

## Introduction to Solar Energy

Instructor: Hicks, Eugene B.  
(919) 629-1471

Department: Continuing Education

Student Level: All levels

Duration: 5 Weeks, 3.0 hrs per week

Contact Hours: 15

Classroom: 15

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SOUTHWESTERN TECH INST

SYLVA, North Carolina 28779

(704) 586-4091

## PROGRAMS AND CURRICULA

## Solar Energy Systems-Res. and Comm.

## Construction

Degree: Certificate of Completion  
Contact: Liming, Glenn  
(704) 586-4091

Students Taking or Completing Offering:

Installer-Residential (Solar System),

Installer-Commercial (Solar System),

Solar Technician

## SOLAR RELATED COURSES

## Introduction to Solar Concepts

Instructor: Liming, Glenn  
(704) 586-4091

Course Number: CAR 1120

Department: Industrial/Vocational

Program or Curriculum: Solar Energy

Systems-Res. and Comm.

Construction

Credits: 4

Student Level: Freshman or Sophomore

Duration: 11 Weeks, 6.0 hrs per week

Contact Hours: 66

Classroom: 33

Laboratory: 33

Number of Times Taught: 1

Aver. Enrollment: 8

## Solar Collector

Instructors: Liming, Glenn  
(704) 586-4091

Course Number: CAR 1121

Department: Industrial/Vocational

Program or Curriculum: Solar Energy

Systems-Res. and Comm.

Construction

Credits: 6

Student Level: Freshman or Sophomore

Duration: 11 Weeks, 13.0 hrs per week

Contact Hours: 143

Classroom: 33

Laboratory: 110

Topics Covered Extensively: Solar  
Collector Evaluation/Design

Number of Times Taught: 1

Average Enrollment: 8

**Solar Energy Heating Systems**

Instructor: Limins, Glenn  
(704) 586-4091

Course Number: CAR 1102

Department: Industrial/Vocational

Program or

Curriculum: Solar Energy  
Systems-Res. and Comm.  
Construction

Credits: 4

Student Level: Freshman or Sophomore

Duration: 11 Weeks, 6.0 hrs per week

Contact Hours: 66

Classroom: 33

Laboratory: 33

Topics Covered Extensively: Intro. to  
Solar Energy; Swimming Pool Heating /

Number of Times Taught: 1

Average Enrollment: 8

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**TECH INST OF ALAMANCE** (5463)  
HAW RIVER, North Carolina 27258  
(919) 578-2002

**SOLAR RELATED COURSES**

**Current Trends**

Instructor: Payne, David M.  
(919) 578-2002

Course Number: AHR 233

Department: Air Conditioning and  
Refrigeration

Credits: 3

Student Level: Freshman or Sophomore

Duration: 11 Weeks, 4.0 hrs per week

Contact Hours: 44

Classroom: 22

Laboratory: 22

Topics Covered Extensively: Appropriate  
Technology; Energy Conservation; Energy  
Storage; Heat and Energy Transfer;  
Intro. to Solar Energy; Plumbing  
Techniques; Solar System Components;  
Solar Collector Evaluation/Design;  
Solar Systems Design; Solar Systems  
Installation; Solar Systems  
Maintenance; Domestic Hot Water; Space  
Heating

Number of Times Taught: 3

Average Enrollment: 16

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**Colleges/Universities**

**MAYVILLE STATE COLLEGE**  
MAYVILLE, North Dakota 58257  
(701) 786-2301

(2993)

**SOLAR RELATED COURSES***\* Energy and the Environment*

Instructor: Carlson, Kenneth T.  
(701) 786-2301  
Course Number: 302  
Department: Science  
Credits: 4  
Student Level: Junior or Senior  
Duration: 12 Weeks, 4.0 hrs per week  
Contact Hours: 48  
Number of Times Taught: 1  
Average Enrollment: 12

**Laboratory:** 193

**Topics Covered Extensively:** Plumbing Techniques; Sheet Metal Techniques; Solar, Home Construction; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling

\*\*\*\*\*

**ND STATE U MAIN CAMPUS**  
FARGO, North Dakota 58102  
(701) 237-8011

(9265)

**SOLAR RELATED COURSES***\* Energy Conservation in Bldgs.*

Department: Eng'r and Architecture  
Student Level: Junior or Senior

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**Community/Junior Colleges**

**BISMARCK JUNIOR COLLEGE**  
BISMARCK, North Dakota 58501  
(701) 223-4500

(2988)

**PROGRAMS AND CURRICULA***Solar Heating*

Degree: Certificate of Completion  
Contact: McKinney, David  
(701) 255-0566

**Students Taking or Completing Offering:**  
Plumber, Sheet Metal Worker

**SOLAR RELATED COURSES***Solar Energy*

Instructor: McKinney, David  
(701) 255-0566  
Department: Heating, Refrigeration,  
and Air Conditioning  
Program or Curriculum: Solar Heating  
Credits: 8  
Student Level: Freshman or Sophomore  
Duration: 8 Weeks, 32.0 hrs per week  
Contact Hours: 256  
Classroom: 63

**Vocational/Technical Colleges**

**ND STATE SCHOOL SCIENCE**  
WAHPETON, North Dakota 58075  
(701) 671-1130

(2996)

**PROGRAMS AND CURRICULA***Environmental Systems Design*

Degree: Certificate, Diploma.  
Contact: Whitcomb, Larry  
(701) 671-2529

**Students Taking or Completing Offering:**  
Installer-Residential (Solar System),  
Installer-Commercial (Solar System),  
Trade Specialty, Plumber; Sheet Metal  
Worker

**SOLAR RELATED COURSES***Systems and Equipment*

Instructor: Whitcomb, Larry  
(701) 671-2529  
Course Number: ESD 203  
Department: Environmental Systems  
Credits: 3  
Student Level: All levels  
Duration: 12 Weeks, 5.0 hrs per week  
Contact Hours: 60  
Classroom: 60  
**Topics Covered Extensively:** Alternate Energy Sources; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Sheet Metal Techniques; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Installation; Solar Systems Maintenance  
Number of Times Taught: 1  
Average Enrollment: 25

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Ohio

Solar Energy Research Institute

**Colleges/Universities**

**AIR FORCE INST TECHNOLOGY** (3009)  
DAYTON, Ohio 45433  
(513) 255-2079

**SOLAR RELATED COURSES**

*Contemporary Energy Applications*

Instructor: Stan, Robert  
(513) 255-4552  
Course Number: 460  
Department: Engineering Technology  
Credits: 3  
Student Level: College Graduate  
Duration: 1 Weeks, 35.0 hrs per week  
Contact Hours: 35  
Number of Times Taught: 1  
Average Enrollment: 30

*Radiation Heat Transfer*

Instructor: Hitchcock, James E.  
(513) 255-3069  
Course Number: ME 6.73  
Department: Aero and Astro. School  
of Engineering  
Credits: 4  
Student Level: College Graduate  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40  
Topics Covered Extensively: Heat and  
Energy Transfer  
Number of Times Taught: 15  
Average Enrollment: 8

**AKRON MAIN CAMPUS, U OF**  
Akron, Ohio 44325  
(216) 375-7111

(3123)

**SOLAR RELATED COURSES**

*Energy Conversion*

Instructor: Gross, Richard J.  
(216) 375-7736  
Course Number: 400-415  
Department: Engineering/ Mechanical  
Engn.  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Energy  
Conversion; Intro. to Solar Energy;  
Solar System Components; Solar  
Collector Evaluation; Design; Solar  
Systems Design; Solar Systems  
Installation; Wind Power, Central  
Systems; Wind Power, Small Systems  
Number of Times Taught: 7  
Average Enrollment: 20

*Physics, Energy and Man*

Instructor: Wilson, C.W.  
(216) 375-7079  
Course Number: ✓400-414

**Department** Physics/Arts and  
Sciences

Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate  
Energy Sources; Energy Conservation;  
Intro. to Solar Energy  
Number of Times Taught: 7  
Average Enrollment: 35

**ANTIOCH COLLEGE** (8795)  
YELLOW SPRINGS, Ohio 45387  
(513) 767-1424

**SOLAR RELATED COURSES**

*Independent Study in Solar Energy*

Instructor: Taylor, Charles  
(513) 767-7331  
Course Number: P 196  
Department: Sci. Inst.-Phys.,  
Envir. Studies  
Credits: 5  
Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 14.0 hrs per week  
Contact Hours: 140  
Classroom: 20  
Laboratory: 40  
Topics Covered Extensively: Intro. to  
Solar Energy; Domestic Hot Water; Space  
Heating  
Number of Times Taught: 2  
Average Enrollment: 5

**CINCINNATI MAIN CAM, U OF**  
CINCINNATI, Ohio 45221  
(513) 475-8000

(3125)

**PROGRAMS AND CURRICULA**

*Mechanical Engineering Technology*

Degree: BS, Mech. Eng'r Tech.  
Contact: Garrett, Ronald W.  
(513) 475-6541  
Students Taking or Completing Offerings:  
Solar Engineer, Installer-Residential  
(Solar System), Installer-Commercial  
(Solar System)

**SOLAR RELATED COURSES**

*E.T.Lab on Alt. Energy Systems*

Instructor: Smith, David Lee  
(513) 475-6426  
Course Number: 23-300-413  
Department: Architecture  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Laboratory: 40

Topics Covered Extensively: Alternate Energy Sources; Passive Solar Technology; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Wind Power, Small Systems

Number of Times Taught: 5  
Average Enrollment: 8

**E.T. Seminar on the Energy Crisis**

Instructor: Smith, David Lee  
(513) 475-6426  
Course Number: 23-300-411  
Department: Architecture  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Solar Economics  
Number of Times Taught: 8  
Average Enrollment: 10

**E.T. Studio on Ener. Conscious Des.**

Instructor: Smith, David Lee  
(513) 475-6426  
Course Number: 23-300-510  
Department: Architecture  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 9.0 hrs per week  
Contact Hours: 90  
Laboratory: 90  
Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Space Cooling  
Number of Times Taught: 12  
Average Enrollment: 12

**Solar Heating and Cooling**

Instructor: Garrett, Ronald W.  
(513) 475-6541  
Course Number: 32-195-467  
Department: Applied  
Science/Mechanical  
Engr. Tech.  
Program or Curriculum: Mechanical Engineering  
Technology  
Credits: 4  
Student Level: Junior or Senior  
Duration: 11 Weeks, 4.0 hrs per week  
Contact Hours: 44  
Classroom: 44  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 35

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**DAYTON, UNIVERSITY OF** (3127)  
DAYTON, Ohio 45469  
(513) 229-0123

**PROGRAMS AND CURRICULA****Energy Conversion**

Degree: MS, BS, Mechanical  
Engineering

Contact: Smith, Howard E.  
(513) 229-2835

Students Taking or Completing Offering:  
Educator, Researcher, Other

**SOLAR RELATED COURSES****Direct Energy Conversion**

Instructor: Chuang, Henry N.  
(513) 229-2835

Course Number: MEE 514

Department: Mechanical Engineering

Program or Curriculum: Energy Conversion

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Photovoltaics; Elec'l Generation, Central; Elec'l Generation, Small Scale

Number of Times Taught: 5

Average Enrollment: 10

**Energy Conversion Systems**

Instructor: Chuang, Henry N.  
(513) 229-2835

Course Number: MEE 402

Department: Mechanical Engineering

Program or Curriculum: Energy Conversion

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Intro. to Solar Energy

Number of Times Taught: 4

Average Enrollment: 25

**Solar Heating Analysis**

Instructor: Chuang, Henry N.  
(513) 229-2835

Course Number: MEE 567

Department: Mechanical Engineering

Program or Curriculum: Energy Conversion

Credits: 3

Student Level: Junior or Senior

Duration: 12 Weeks, 4.0 hrs per week

Contact Hours: 48

Classroom: 45

Laboratory: 3

Topics Covered Extensively: Energy

Ohio

Solar Energy Research Institute

Storage; Intro. to Solar Energy;  
Passive Solar Technology; Solar System  
Components; Solar Economics; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Space Heating  
Number of Times Taught: 2  
Average Enrollment: 12

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DEFIANCE COLLEGE  
DEFIANCE, Ohio 43512  
(419) 784-4010

(3041)

SOLAR RELATED COURSES

Energy Alternatives

Instructor: Miller, Harry G.  
(419) 784-4010  
Course Number: 11-50  
Department: Physics & Mathematics  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 4 Weeks, 15.0 hrs per week  
Contact Hours: 60  
Classroom: 50  
Topics Covered Extensively: Alternate  
Energy Sources; Energy Conversion  
Number of Times Taught: 4  
Average Enrollment: 12

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KENT STATE U MAIN CAMPUS  
KENT, Ohio 44240  
(216) 672-2121

(3051)

PROGRAMS AND CURRICULA

Architects & Energy

Contact: Kremers  
(216) 672-2789

Students Taking or Completing Offering:  
Architect, Do-it-yourself Homeowner

SOLAR RELATED COURSES

Architects & Energy 62598

Instructor: Kremers  
(216) 672-2789  
Course Number: 62598  
Department: Architecture  
Program or  
Curriculum: Architects & Energy  
Credits: 3  
Student Level: College Graduate  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Storage;  
Heat and Energy Transfer; Intro. to  
Solar Energy; Marketing/Market  
Analysis; Passive Solar Technology;  
Solar System Components; Solar  
Economics; Solar Home Construction;  
Solar Systems Design; Domestic Hot

Water; Space Heating; Space Cooling;  
Wind Power, Small Systems  
Number of Times Taught: 1  
Average Enrollment: 10

Energy Conversion Utilization

Instructor: Loughridge, R./ Lees,  
J./ Phillips, Jr.  
(216) 672-2892

Course Number: 20001  
Department: Technology  
Credits: 3  
Student Level: All Levels  
Duration: 10 Weeks, 6.0 hrs per week  
Contact Hours: 60  
Classroom: 30  
Laboratory: 30  
Topics Covered Extensively: Energy  
Conversion; Heat and Energy Transfer;  
Process Heat, Industrial; Space  
Heating; Space Cooling

Power Technology

Instructor: Lees, James  
(216) 672-2892

Course Number: 31032  
Department: Technology  
Credits: 5  
Student Level: All levels  
Duration: 10 Weeks, 10.0 hrs per week  
Contact Hours: 100  
Classroom: 50  
Laboratory: 50  
Number of Times Taught: 21  
Average Enrollment: 20

Solar Energy Today

Instructor: Kremers  
(216) 672-2789

Course Number: CONT. ED.  
Department: Architecture  
Program or  
Curriculum: Architects & Energy  
Credits: 2  
Student Level: All levels  
Duration: 10 Weeks, 2.0 hrs per week  
Contact Hours: 20

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Storage;  
Heat and Energy Transfer; Intro. to  
Solar Energy; Passive Solar Technology;  
Solar Economics; Solar Home  
Construction; Solar Systems Design;  
Domestic Hot Water; Space Heating; Wind  
Power, Small Systems  
Number of Times Taught: 2  
Average Enrollment: 25

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1978-79 National Solar/Energy Education Directory

Ohio

**OHIO NORTHERN UNIVERSITY**  
ADA, Ohio 45810  
(419) 634-9921

(3089)

SOLAR RELATED COURSES

*Solar Energy Engineering*

Instructor: Farrington, Frank  
(419) 634-9921  
Course Number: 204590.03  
Department: Mech. Engr.  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Topics Covered Extensively: Appropriate Technology; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Space heating  
Number of Times Taught: 1  
Average Enrollment: 26

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**OHIO STATE U MAIN CAMPUS**  
COLUMBUS, Ohio 43210  
(614) 422-6446

(6883)

SOLAR RELATED COURSES

*Intro. To Agricultural Engin. Design*

Instructor: Bendorst, Byron L.  
(614) 422-6131  
Course Number: AE 223  
Department: Agricultural Engineering  
Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 10  
Laboratory: 30  
Number of Times Taught: 9  
Average Enrollment: 15

*Solar Energy Thermal Systems*

Instructor: Sepsy, C. F.  
Course Number: ME 614  
Department: Mech. Engr.  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer; Solar System Components; Solar Economics; Solar Systems Design; Domestic Hot Water  
Number of Times Taught: 2  
Average Enrollment: 35

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**OHIO STATE U HANSFIELD BR**  
HANSFIELD, Ohio 44906  
(419) 747-6561

(3093)

SOLAR RELATED COURSES

*Solar Energy*

Instructor: Clark, D. L.  
(419) 755-4011  
Department: Continuing Education  
Student Level: All levels  
Duration: 4 Weeks, 2.5 hrs per week  
Contact Hours: 10  
Classroom: 10  
Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Solar Collector Evaluation/Design; Space Heating  
Average Enrollment: 65

*Wind Energy*

Instructor: Clark, D. L.  
(419) 755-4011  
Department: Continuing Education  
Student Level: All levels  
Duration: 4 Weeks, 2.5 hrs per week  
Contact Hours: 10  
Classroom: 10  
Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Solar Collector Evaluation/Design; Space Heating; Wind Power, Small Systems  
Average Enrollment: 45

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**TOLEDO, UNIVERSITY OF**  
TOLEDO, Ohio 43606  
(419) 537-2072

(3131)

SOLAR RELATED COURSES

*Energy Conversion I*

Instructor: Eltimshah, Adel H.  
(419) 537-2638  
Course Number: 436:364  
Department: Electrical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Topics Covered Extensively: Energy Conversion  
Number of Times Taught: 2  
Average Enrollment: 40

*Power Electronics I*

Instructor: Stuart, T.  
(419) 537-2251  
Course Number: 436:468  
Department: Electrical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Topics Covered Extensively: Energy Conversion

Ohio

Solar Energy Research Institute

Number of Times Taught: 3  
Average Enrollment: 10

*Power Electronics II*

Instructor: Stuart, T.  
(419) 537-2251

Course Number: 436:469  
Department: Electrical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30

Topics Covered Extensively: Energy  
Conversion

Number of Times Taught: 3  
Average Enrollment: 10

*Solar Energy Utilization*

Instructor: Eltimasahy, Adel H.  
(419) 537-2638  
Course Number: 436-4/563  
Department: Electrical Engineering  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 30

Topics Covered Extensively: Energy  
Storage; Intro. to Solar Energy;  
Photovoltaics; Solar System Components;  
Solar Systems Design; Elec'l  
Generation; Central; Elec'l Generation;  
Small Scale; Space Heating; Space  
Cooling

Number of Times Taught: 4  
Average Enrollment: 15

*Solar Heating and Cooling*

Course Number: 434:641  
Department: Mechanical Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 11 Weeks, 3.0 hrs per week  
Contact Hours: 33  
Classroom: 33

Topics Covered Extensively: Energy  
Storage; Heat and Energy Transfer;  
Intro. to Solar Energy; Passive Solar  
Technology; Solar System Components;  
Solar Economics; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Domestic Hot Water

Number of Times Taught: 1  
Average Enrollment: 10

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WALSH COLLEGE  
CANTON, Ohio 44720  
(216) 499-7090

(3135)

SOLAR RELATED COURSES

*Solar Heating*

Instructor: Over, Calvin S.  
Course Number: CE0109  
Department: Continuing Education  
Student Level: All levels

Duration: 5 Weeks, 1.0 hrs per week  
Contact Hours: 5  
Classroom: 5  
Topics Covered Extensively: Intro. to  
Solar Energy  
Number of Times Taught: 0

XAVIER UNIVERSITY  
CINCINNATI, Ohio 45207  
(513) 745-3000

(3144)

SOLAR RELATED COURSES

*Experiments in Physics*

Instructor: Toepker, Terrence  
(513) 745-3626  
Course Number: PH330  
Department: Physics  
Credits: 3  
Student Level: College Graduate  
Duration: 5 Weeks, 7.5 hrs per week  
Contact Hours: 38  
Classroom: 12  
Laboratory: 26  
Number of Times Taught: 1  
Average Enrollment: 3

YOUNGSTOWN ST UNIVERSITY  
YOUNGSTOWN, Ohio 44555  
(216) 746-1851

(3145)

SOLAR RELATED COURSES

*Adv. Topics in Solar Energy Engr.*

Instructor: Alexander, Charles  
(216) 742-3013  
Course Number: EE972  
Department: Elec. Engineering  
Credits: 4  
Student Level: College Graduate  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40

Topics Covered Extensively: Appropriate  
Technology; Energy Storage; Solar  
System Components; Solar Economics;  
Solar Home Construction; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Solar Systems  
Installation; Solar Systems Testing and  
Evaluation; Domestic Hot Water;  
Swimming Pool Heating; Elec'l  
Generation, Central; Process Heat,  
Industrial; Space Heating; Space  
Cooling

Number of Times Taught: 2  
Average Enrollment: 10

*Introduction to Modern Technology*

Instructor: Alexander, Charles  
(216) 742-3013  
Course Number: EE 555  
Department: Elec. Engin.  
Credits: 4

Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40  
Number of Times Taught: 1  
Average Enrollment: 21

**Solar Energy Engineering**

Instructor: Alexander, Charles  
(216) 742-3013  
Course Number: EE971  
Department: Elec. Engineering  
Credits: 4  
Student Level: College Graduate  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40  
Topics Covered Extensively: Appropriate Technology; Energy Conversion; Heat and Energy Transfer; Photovoltaics; Domestic Hot Water; Elec'l Generation, Central; Space Heating  
Number of Times Taught: 6  
Average Enrollment: 10

**Solar Energy Engineering 831**

Instructor: Alexander, Charles  
(216) 742-3013  
Course Number: EE 831  
Department: Elec. Engin.  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40  
Topics Covered Extensively: Appropriate Technology; Energy Conversion; Heat and Energy Transfer; Photovoltaics; Solar System Components; Domestic Hot Water; Elec'l Generation, Central; Space Heating  
Number of Times Taught: 9  
Average Enrollment: 33

**Solar Energy Systems, Syn. and Opt.**

Instructor: Alexander, Charles  
(216) 742-3013  
Course Number: EE832  
Department: Elec. Engineering  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40  
Topics Covered Extensively: Appropriate Technology; Energy Storage; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Elec'l Generation, Central; Process Heat, Industrial; Space Heating; Space Cooling  
Number of Times Taught: 3  
Average Enrollment: 13

**Community/Junior Colleges**

**LAKELAND CHTY COLLEGE**  
MENTOR, Ohio 44060  
(216) 951-1000

(6804)

**SOLAR RELATED COURSES**

**Solar Heating**  
Instructor: Susek, Frank  
(216) 951-1000  
Course Number: LL50558  
Department: Lifelong Learning  
Student Level: All levels  
Duration: 10 Weeks, 2.0 hrs per week  
Contact Hours: 20  
Classroom: 20  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 5

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**SINCLAIR CHTY COLLEGE**

DAYTON, Ohio 45402  
(513) 226-2500

(3119)

**SOLAR RELATED COURSES**

**Intro to Solar Heating and Cooling**  
Instructor: Nataraj, Nataraj S.  
(513) 226-2835  
Course Number: EGR 125  
Department: Engineering and Indus. Tech  
Credits: 3  
Student Level: All levels  
Duration: 11 Weeks, 3.0 hrs per week  
Contact Hours: 33  
Classroom: 27  
Laboratory: 6  
Number of Times Taught: 2  
Average Enrollment: 15

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**Vocational/Technical Colleges**

Ohio

Solar Energy Research Institute

CENTRAL OHIO TECHNICAL C  
NEWARK, Ohio 43055  
(614) 366-1351

(11046)

SOLAR RELATED COURSES

Environmental Control

Instructor: Bond, Robert  
(614) 366-1351

Course Number: 3443

Department: Division of Engineering  
Technologies

Credits: 3

Student Level: Freshman or Sophomore

Duration: 12 Weeks, 5.0 hrs per week

Contact Hours: 60

Classroom: 24

Laboratory: 36

Topics Covered Extensively: Intro. to  
Solar Energy; Solar Collector  
Evaluation/Design; Solar Systems  
Installation; Space Heating; Space  
Cooling

to Solar Energy; Solar System  
Components; Solar Systems Design; Solar  
Systems Installation  
Number of Times Taught: 3  
Average Enrollment: 10

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NORTHWEST TECH COLLEGE

ARCHBOLD, Ohio 43502

(419) 267-5511

(8677)

SOLAR RELATED COURSES

Here Comes The Sun

(419) 267-5511

Student Level: All levels

Duration: 1 Weeks, 11.0 hrs per week

Contact Hours: 11

Topics Covered Extensively: Energy  
Storage; Intro. to Solar Energy;  
Passive Solar Technology; Plumbing,  
Techniques; Solar System Components;  
Solar Economics; Solar Collector  
Evaluation/Design; Solar Systems /  
Design; Solar Systems Installation;  
Solar Systems Testing and Evaluation;  
Domestic Hot Water; Swimming Pool  
Heating; Space Heating

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COLUMBUS TECHNICAL INST  
COLUMBUS, Ohio 43216  
(614) 221-6743

(16867)

SOLAR RELATED COURSES

Solar Energy

Instructor: Pierce, David  
(614) 221-6743

Department: Architecture

Credits: 3

Student Level: Freshman or Sophomore

Duration: 11 Weeks, 4.0 hrs per week

Contact Hours: 44

Classroom: 22

Laboratory: 22

Topics Covered Extensively: Solar System  
Components; Solar Home Construction;  
Solar Collector Evaluation/Design;  
Solar Systems Design; Solar Systems  
Testing and Evaluation; Domestic Hot  
Water; Space Heating; Space Cooling

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MUSKINGUM AREA TECH C  
ZANESVILLE, Ohio 43701  
(614) 454-2501

(8133)

SOLAR RELATED COURSES

Solar Home Heating

Instructor: Goehring, C.  
(614) 454-2501

Course Number: ACE 186

Department: Lifelong Learning

Student Level: All Levels

Duration: 5 Weeks, 2.0 hrs per week

Contact Hours: 10

Classroom: 10

Topics Covered Extensively: Appropriate  
Technology; Energy Conversion; Intro.

Other Educational Institutions

NHAW - HOME STUDY INSTITUTE

(190400)

1661 West Henderson

Columbus, Ohio 43220

PROGRAMS AND CURRICULA

\*Home Study Program

Contact: Healy, James

(614) 459-2100

Students Taking or Completing Offering:  
Solar Technician

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1978-79 National Solar Energy Education Directory

Oklahoma

**Colleges/Universities**

OKLA STATE U. MAIN CAMPUS  
STILLWATER, OKLAHOMA 74074  
(405) 624-5800

(3170)

**PROGRAMS AND CURRICULA**

*Mec. Engin.-Emphasis on Energy*  
Degree: FHD, MS, BS, Electrical  
Engineering  
Contact: Bacon, C.M.  
(405) 624-5156

**SOLAR RELATED COURSES**

*Alternative Energy Systems*

Instructor: Proppe, Jody  
(405) 624-6266  
Department: Architecture Extension  
Student Level: All levels  
Duration: 1 Weeks, 7.0 hrs per week  
Contact Hours: 7  
Classroom: 7  
Topics Covered Extensively: Alternate  
Energy Sources; Energy Conservation;  
Intro to Solar Energy; Passive Solar  
Technology

*Des. and Cons. of Energy Sav. Homes*

Instructor: Bose, Jim/ Irby, Dean  
(405) 624-5638  
Department: Technology Extension  
Student Level: All levels  
Duration: 1 Weeks, 16.0 hrs per week  
Contact Hours: 16  
Classroom: 16  
Topics Covered Extensively: Alternate  
Energy Sources; Solar Systems Design;  
Solar Systems Installation; Solar  
Systems Maintenance  
Number of Times Taught: 2  
Average Enrollment: 25

*Design of Solar Systems*

Instructor: Dubensky, Robert  
Department: Technology Extension  
Student Level: All levels  
Duration: 1 Weeks, 8.0 hrs per week  
Contact Hours: 8  
Classroom: 8  
Topics Covered Extensively: Alternate  
Energy Sources; Energy Conservation;  
Energy Conversion; Energy Storage; Heat  
and Energy Transfer; Solar Systems  
Design  
Number of Times Taught: 1  
Average Enrollment: 100

*Direct Energy Conversion I*

Instructor: Ramakumar, R.  
(405) 624-5170  
Course Number: 4133  
Department: Electrical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Energy

*Conversion; Intro. to Solar Energy*

Number of Times Taught: 17  
Average Enrollment: 25

*Direct Energy Conversion II*

Instructor: Ramakumar, R.  
(405) 624-5170  
Course Number: 5153  
Department: Electrical Engineering  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Energy  
Conversion; Intro. to Solar Energy;  
Photovoltaics; Elec'l Generation,  
Central; Elec'l Generation, Small  
Scale; Wind Power, Central Systems;  
Wind Power, Small Systems  
Number of Times Taught: 4  
Average Enrollment: 11

*Earth Sheltered Housing Design*

Instructor: Proppe, Jody  
(405) 624-6266  
Department: Architecture Extension  
Student Level: All levels  
Duration: 1 Weeks, 14.0 hrs per week  
Contact Hours: 14  
Classroom: 14  
Number of Times Taught: 9  
Average Enrollment: 70

*Elect. Engr. Aspects-Hind Ener. Systems*

Instructor: Hughes, W.L./  
Lingelbach, D.  
(405) 624-5168  
Department: Cont. Education  
Student Level: All levels  
Duration: 1 Weeks, 7.0 hrs per week  
Contact Hours: 7  
Topics Covered Extensively: Energy  
Conversion; Elec'l Generation, Central;  
Elec'l Generation, Small Scale; Wind  
Power, Small Systems

*Energy Conservation and Management*

Instructor: Turner, W.C.  
(405) 624-6055  
Department: Industrial Engineering  
and Management  
Credits:  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 30  
Laboratory: 18  
Topics Covered Extensively: Energy  
Conservation

*Energy Conservation and Management*

Instructor: Turner, W.C.  
(405) 624-6055  
Course Number: INDEN4923  
Department: Indus. Engr. and  
Management  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week

**Oklahoma****Solar Energy Research Institute**

Contact Hours: 48  
 Classroom: 32  
 Laboratory: 16  
 Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conservation; Energy Storage; Solar Economics; Process Heat; Industrial Space Heating; Space Cooling; Wind Power; Small Systems

**Environmental Power Systems**

Instructor: Bryant, John  
 (405) 624-6043

Course Number: 5763

Department: Architecture

Credits: 3

Student Level: College Graduate

Duration: 16 Weeks, 3.0 hrs per week

Contact Hours: 48

Classroom: 48

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy; Passive Solar Technology

Number of Times Taught: 1

Average Enrollment: 6

**Hot Air Panel Cons.**

Instructor: Bose, Jim  
 (405) 624-5638

Department: Technology Extension

Student Level: All levels

Duration: 1 Weeks, 8.0 hrs per week

Contact Hours: 8

Classroom: 8

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Solar Systems Design

Number of Times Taught: 6

Average Enrollment: 50

**Illumination and Power Distribution**

Instructor: Bryant, John  
 (405) 624-6043

Course Number: 5724

Department: Architecture

Credits: 4

Student Level: College Graduate

Duration: 16 Weeks, 4.0 hrs per week

Contact Hours: 64

Classroom: 64

Topics Covered Extensively: Energy Conservation

Number of Times Taught: 5

Average Enrollment: 6

**Intro. to Solar Heating**

Instructor: Dubensky, Robert  
 Department: Technology Extension

Student Level: All levels

Duration: 1 Weeks, 8.0 hrs per week

Contact Hours: 8

Classroom: 8

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Solar Systems Design

Number of Times Taught: 22

Average Enrollment: 27

**Lighting/Energy Design**

Instructor: Proppe, Jody  
 (405) 624-6266

Department: Architecture Extension

Student Level: College Graduate

Duration: 1 Weeks, 14.0 hrs per week

Contact Hours: 14

Classroom: 7

Laboratory: 7

Topics Covered Extensively: Energy Conservation

**Solar Controls & Storage**

Instructor: Dubensky, Robert

Department: Technology Extension

Student Level: All levels

Duration: 1 Weeks, 8.0 hrs per week

Contact Hours: 8

Classroom: 8

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Solar Systems Design

Number of Times Taught: 2

Average Enrollment: 50

**Solar Energy**

Instructor: Parker, Jerald D.  
 (405) 624-5900

Course Number: MAE5010

Department: Engr. Tech. and Arch/  
 School of MAE

Credits: 3

Student Level: Junior or Senior

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Classroom: 42

Topics Covered Extensively: Intro. to Solar Energy; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design

Number of Times Taught: 1

Average Enrollment: 30

**Solar Heating and Energy Saving Systems**

Instructor: Bose, James E.  
 (405) 624-5638

Course Number: GENT4050

Department: Technology

Credits: 3

Student Level: Junior or Senior

Duration: 16 Weeks, 3.0 hrs per week

Contact Hours: 48

Classroom: 48

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Storage; Plumbing Techniques; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water;

Swimming Pool Heating; Space Heating; Space Cooling

Number of Times Taught: 1

Average Enrollment: 45

**Solar Heating Appl.**

Instructor: Bose, Jim  
 Department: Technology Extension  
 Student Level: All levels  
 Duration: 1 Weeks, 8.0 hrs per week  
 Contact Hours: 8  
 Classroom: 8  
 Topics Covered Extensively: Alternate Energy Sources; Solar Economics; Solar Home Construction  
 Number of Times Taught: 2  
 Average Enrollment: 20

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OKLAHOMA NORMAN CAM, U OF  
 NORMAN, Oklahoma 73019  
 (405) 325-0311

(3184)

**SOLAR RELATED COURSES**

**Energy Conservation in Buildings - Seminar**  
 Instructor: Calvert, Floyd O.  
 Course Number: (405) 325-2444  
 Department: 6023  
 Credits: Architecture  
 Student Level: 3  
 Duration: Junior or Senior  
 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Energy Conservation; Passive Solar Technology  
 Number of Times Taught: 4  
 Average Enrollment: 20

**Energy Conservation Seminar**

Instructor: Calvert, Floyd O.  
 Course Number: (405) 325-2444  
 Department: ARCH 6023  
 Credits: Architecture  
 Student Level: 3  
 Duration: Junior or Senior  
 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Energy Conservation; Passive Solar Technology  
 Number of Times Taught: 4  
 Average Enrollment: 20

**Solar Energy Thermal Processes**

Instructor: Turkington, D.B.  
 Course Number: (405) 325-5011  
 Department: AME 6730  
 Credits: Aerospace, Mech. and Nuclear Engineering  
 Student Level: 3  
 Duration: College Graduate  
 15 Weeks, 3:0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Intro. to Solar Energy; Solar Collector  
 Evaluation/Design; Solar Systems  
 Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 13

**Special Top-Physical Chemistry**

Instructor: Murphy, George  
 Course Number: (405) 325-3691  
 Department: 6670  
 Credits: Chemistry  
 2  
 Student Level: College Graduate  
 Duration: 2 Weeks, 13.0 hrs per week  
 Contact Hours: 25  
 Classroom: 25

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TULSA, UNIVERSITY OF

(3185)

TULSA, Oklahoma 74104  
 (918) 939-6351**SOLAR RELATED COURSES**

**Solar Energy Seminar**  
 Instructor: Ketcham, Bruce V.  
 Course Number: (918) 939-6351  
 Department: E.S. 3093  
 Credits: Engineering  
 3  
 Student Level: Junior or Senior  
 Topics Covered Extensively: Energy Storage; Intro. to Solar Energy;  
 Passive Solar Technology; Solar System Components; Solar Collector  
 Evaluation/Design; Solar Systems Design; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 35

**Solar Heating and Cooling Fundamentals**

Instructor: Ketcham, Bruce V.  
 Course Number: (918) 939-6351  
 Department: E.S. 3093  
 Credits: Engineering  
 3  
 Student Level: Junior or Senior  
 Topics Covered Extensively: Energy Storage; Intro. to Solar Energy;  
 Passive Solar Technology; Solar System Components; Solar Collector  
 Evaluation/Design; Solar Systems Design; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 35

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**Colleges/Universities**

**OREGON INST OF TECHNOLOGY**  
KLAMATH FALLS, Oregon 97601  
(503) 882-6321

(3211)

**SOLAR RELATED COURSES****Seminar (Solar Heating)**

Instructor: King, William N.  
(503) 882-6321  
Course Number: MET 207  
Department: Mechanical Engineering  
Technology  
Credits: 1  
Student Level: All levels  
Duration: 5 Weeks, 2.0 hrs per week  
Contact Hours: 10  
Classroom: 10  
Topics Covered Extensively: Passive  
Solar Technology; Solar System  
Components; Solar Economics; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Domestic Hot Water;  
Space Heating  
Number of Times Taught: 1  
Average Enrollment: 74

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**OREGON MAIN CAMPUS, U OF**  
EUGENE, Oregon 97403  
(503) 686-3111

(3223)

**PROGRAMS AND CURRICULA****Solar Energy Center**

Degree: no.  
Contact: Reynolds, John S.  
(503) 686-3631

Students Taking or Completing Offering:  
Architect, Educator, Researcher, Solar  
Technician

**SOLAR RELATED COURSES****Environmental Control Systems 321**

Instructor: Reynolds, John S.  
(503) 686-3631  
Course Number: ARCH 321  
Department: Architecture  
Program or  
Curriculum: Solar Energy Center  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Storage;  
Heat and Energy Transfer; Intro. to  
Solar Energy; Materials Research;  
Passive Solar Technology; Plumbing  
Techniques; Solar System Components;  
Solar Economics; Solar Home  
Construction; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Domestic Hot Water; Space  
Heating; Space Cooling

Heating; Space Cooling  
Number of Times Taught: 5  
Average Enrollment: 140

**Environmental Control Systems 322**

Instructor: Reynolds, John S.  
(503) 686-3631  
Course Number: ARCH 322  
Department: Architecture  
Program or  
Curriculum: Solar Energy Center  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40  
Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Storage;  
Heat and Energy Transfer; Intro. to  
Solar Energy; Materials Research;  
Passive Solar Technology; Plumbing  
Techniques; Solar System Components;  
Solar Economics; Solar Home  
Construction; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Domestic Hot Water; Space  
Heating; Space Cooling  
Number of Times Taught: 5  
Average Enrollment: 140

**Environmental Control Systems 323**

Instructor: Reynolds, John S.  
(503) 686-3631  
Course Number: ARCH 323  
Department: Architecture  
Program or  
Curriculum: Solar Energy Center  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 4.0 hrs per week  
Contact Hours: 40  
Classroom: 40  
Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Storage;  
Heat and Energy Transfer; Intro. to  
Solar Energy; Materials Research;  
Passive Solar Technology; Plumbing  
Techniques; Solar System Components;  
Solar Economics; Solar Home  
Construction; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Domestic Hot Water; Space  
Heating; Space Cooling  
Number of Times Taught: 5  
Average Enrollment: 140

**Sun as a Future Energy Source**

Instructor: McDaniels, D. K.  
(503) 686-4765  
Course Number: PH 116  
Department: Physics  
Program or  
Curriculum: Solar Energy Center  
Credits: 3  
Student Level: All levels  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30

**Topics Covered Extensively:** Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Elec'l Generation, Central; Space Heating  
**Number of Times Taught:** 10  
**Average Enrollment:** 200

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**OREGON STATE UNIVERSITY**  
 CORVALLIS, Oregon 97331  
 (503) 754-1133

**SOLAR RELATED COURSES**

**Atmospheric Radiative Processes**

**Instructor:** Rao, C.R.H.  
 (503) 754-4557  
**Course Number:** 560/561  
**Department:** Atmospheric Sciences  
**Credits:** 3  
**Student Level:** College Graduate  
**Duration:** 10 Weeks, 4.0 hrs per week  
**Contact Hours:** 40  
**Classroom:** 30  
**Topics Covered Extensively:** Heat and Energy Transfer

**Farm Structures 361**

**Instructor:** Hellickson, Martin L.  
 (503) 754-2041  
**Course Number:** AET 361  
**Department:** Agricultural Engineering  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 9 Weeks, 5.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 27  
**Laboratory:** 18  
**Average Enrollment:** 25

**Farm Structures 461**

**Instructor:** Hellickson, Martin L.  
 (503) 754-2041  
**Course Number:** AE 461  
**Department:** Agricultural Engineering  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 9 Weeks, 5.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 27  
**Laboratory:** 18  
**Average Enrollment:** 25

**Solar Energy Thermal Processes**

**Instructor:** Larson, Milton B.  
 (503) 754-4646  
**Course Number:** ME 406  
**Department:** Mechanical Engineering  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 10 Weeks, 3.0 hrs per week

**Contact Hours:** 30  
**Classroom:** 30  
**Topics Covered Extensively:** Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
**Number of Times Taught:** 12  
**Average Enrollment:** 12

**Solar Pad, and Meteorological Measurement**

**Instructor:** Rao, C.R.H.  
 (503) 753-1534  
**Course Number:** 420/421  
**Department:** Atmospheric Sciences  
**Credits:** 4  
**Student Level:** Junior or Senior  
**Duration:** 10 Weeks, 7.0 hrs per week  
**Contact Hours:** 70  
**Classroom:** 20  
**Laboratory:** 40  
**Topics Covered Extensively:** Intro. to Solar Energy

**Spatial Studies**

**Instructor:** Hellickson, Martin L.  
 (503) 754-2041  
**Course Number:** AE 199  
**Department:** Agricultural Engineering  
**Credits:** 1  
**Student Level:** Freshman or Sophomore  
**Duration:** 10 Weeks, 1.0 hrs per week  
**Contact Hours:** 10  
**Classroom:** 3  
**Laboratory:** 7  
**Number of Times Taught:** 3  
**Average Enrollment:** 30

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**PACIFIC UNIVERSITY**

(3212)

FOREST GROVE, Oregon 97116  
 (503) 357-6151

**SOLAR RELATED COURSES**

**Ener. Cons. in the Residential Sector**

**Instructor:** Griffith, Tom/ Story, Joe  
 (503) 357-6151  
**Course Number:** 555  
**Department:** Science/Social Sciences  
**Credits:** 3  
**Student Level:** College Graduate  
**Duration:** 3 Weeks, 15.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45  
**Topics Covered Extensively:** Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector

**Oregon****Solar Energy Research Institute**

**Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Elec'l Generation, Central; Elec'l Generation, Small Scale; Space Heating**

Number of Times Taught: 1

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**Community/Junior Colleges**

**CLACKAMAS CMTY COLLEGE** (4878)  
OREGON CITY, Oregon 97045  
(503) 656-2631

**SOLAR RELATED COURSES****Introduction to Appropriate Energy**

Instructor: Aronson, Mike  
(503) 656-2631  
Department: Physical Science  
Credits: 3  
Student Level: All levels  
Duration: 11 Weeks, 3.0 hrs per week  
Contact Hours: 33  
Classroom: 22  
Laboratory: 11  
Topics Covered Extensively: Intro. to Solar Energy; Passive Solar Technology; Solar Systems Design; Space Heating

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**LINN-BENTON CMTY COLLEGE** (6938)  
ALBANY, Oregon 97321  
(503) 928-2361

**PROGRAMS AND CURRICULA****Engineering Tech.-Solar Energy Option**

Degree: AD, Engineering Tech.  
Contact: Miller, Dave  
(503) 928-2361

**SOLAR RELATED COURSES****Alternative Energy Sources**

Course Number: 3.527  
Department: Engineering Technology  
Program or Curriculum: Engineering Tech.-Solar Energy Option  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 11 Weeks, 6.0 hrs per week  
Contact Hours: 66  
Classroom: 33  
Laboratory: 33  
Topics Covered Extensively: Alternative Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion;

**Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Elec'l Generation, Small Scale; Wind Power, Small Systems**

Number of Times Taught: 4

Average Enrollment: 15

**Energy Systems Management**

Course Number: 6.220  
Department: Engineering Technology  
Program or Curriculum: Engineering Tech.-Solar Energy Option  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 11 Weeks, 3.0 hrs per week  
Contact Hours: 33  
Classroom: 33  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Elec'l Generation, Central; Elec'l Generation, Small Scale; Process Heat, Industrial; Space Heating; Space Cooling; Wind Power, Central Systems; Wind Power, Small Systems

**Solar Energy**

Course Number: 6.221  
Department: Engineering Technology  
Program or Curriculum: Engineering Tech.-Solar Energy Options  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 11 Weeks, 3.0 hrs per week  
Contact Hours: 33  
Classroom: 33  
Topics Covered Extensively: Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Elec'l Generation, Small Scale; Space Heating; Wind Power, Small Systems  
Number of Times Taught: 2  
Average Enrollment: 12

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ROGUE COMMUNITY COLLEGE (10182)  
GRANTS PASS, Oregon 97526  
(503) 479-5541

SOLAR RELATED COURSES

Nat. Ener. Convts., Dom. Sol. Water Heater  
Instructor: Lilly, Joseph  
(503) 479-5541  
Course Number: 642  
Department: Science and Small Farm Management  
Credits: 3  
Student Level: All levels  
Duration: 14 Weeks, 5.0 hrs per week  
Contact Hours: 70  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Law/Legislation; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Space Heating  
Number of Times Taught: 4  
Average Enrollment: 14

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**Pennsylvania****Solar Energy Research Institute****Colleges/Universities**

**CALIFORNIA STATE COLLEGE** (3316)  
 CALIFORNIA, Pennsylvania 15419  
 (412) 938-4000

**SOLAR RELATED COURSES****Energy and Power**

Instructor: Halliday, William  
 (412) 938-4153  
 Department: Physical Science  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Elec'l Generation, Central; Elec'l Generation, Small Scale  
 Number of Times Taught: 2  
 Average Enrollment: 25

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**DICKINSON COLLEGE**  
 CARLISLE, Pennsylvania 17013  
 (717) 243-5121

**SOLAR RELATED COURSES**

*Appro. Tech-Is Small Beautiful?*  
 Instructor: Kromkowski, F.  
 (717) 243-5121  
 Course Number: ESI.102  
 Department: Environmental Science  
 Credits: 4  
 Student Level: All levels  
 Duration: 3 Weeks, 15.0 hrs per week  
 Contact Hours: 45  
 Classroom: 39  
 Topics Covered Extensively: Appropriate Technology  
 Number of Times Taught: 1  
 Average Enrollment: 9

**Environmental Economics**

Instructor: Houston, C.  
 (717) 243-5121  
 Course Number: ECON 222  
 Department: Economics  
 Credits: 4  
 Student Level: All levels  
 Duration: 13 Weeks, 3.0 hrs per week  
 Contact Hours: 39  
 Classroom: 30  
 Topics Covered Extensively: Appropriate Technology; Marketing/Market Analysis  
 Number of Times Taught: 2  
 Average Enrollment: 35

**Meteorology**

Instructor: Laws, K.  
 (717) 243-5121  
 Course Number: PHS 202

Department: Physics  
 Credits: 4  
 Student Level: All levels  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 42  
 Classroom: 42  
 Number of Times Taught: 7  
 Average Enrollment: 50

**Topics in Contemporary Physics**

Instructor: Long, H.  
 (717) 243-5121  
 Course Number: PHS 461  
 Department: Physics & Astronomy  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 42  
 Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy  
 Number of Times Taught: 12  
 Average Enrollment: 7

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**DREXEL UNIVERSITY** (3256)  
 PHILADELPHIA, Pennsylvania 19104  
 (215) 895-2000

**SOLAR RELATED COURSES**

**Solar Energy**  
 Instructor: Larson, Donald C.  
 (215) 895-2724  
 Course Number: N775  
 Department: Science/Physics  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
 Number of Times Taught: 3

**Solar Heating and Cooling**

Instructor: Larson, Donald  
 (215) 895-2724  
 Department: Continuing Professional Education  
 Student Level: College Graduate  
 Duration: 8 Weeks, 2.5 hrs per week  
 Contact Hours: 20  
 Classroom: 18  
 Laboratory: 2  
 Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating  
 Number of Times Taught: 4  
 Average Enrollment: 30

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**1978-79 National Solar Energy Education Directory**

Pennsylvania

**GANNON COLLEGE**  
ERIE, Pennsylvania 16501  
(814) 456-7523

**SOLAR RELATED COURSES****Design Project for Solar Heat**

Instructor: Dowell, Milt  
(814) 838-1683

Course Number: E160  
Department: Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 14 Weeks, 6.0 hrs per week  
Contact Hours: 84  
Topics Covered Extensively: Space  
Heating

Average Enrollment: 1

(3266)

Photovoltaics; Solar System Components;  
Solar Economics; Solar Collector  
Evaluation/Design; Domestic Hot Water;  
Space Heating

Number of Times Taught: 1  
Average Enrollment: 18

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**KUTZTOWN STATE COLLEGE**  
KUTZTOWN, Pennsylvania 19530  
(215) 683-3511

**SOLAR RELATED COURSES****Our Physical Ecosystem**

Instructor: Walter, Karl F.  
(215) 683-3511

Course Number: PHY 015  
Department: Physical Science  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Classroom: 30  
Laboratory: 30

Topics Covered Extensively: Energy  
Conservation

Number of Times Taught: 6  
Average Enrollment: 10

**GETTYSBURG COLLEGE**  
GETTYSBURG, Pennsylvania 17325  
(717) 334-3131

(3268)

**SOLAR RELATED COURSES****Energy and Environment**

Instructor: Cowan, David J.  
(717) 334-3131

Course Number: 140  
Department: Physics  
Credits: 3  
Student Level: All levels  
Duration: 12 Weeks, 3.0 hrs per week  
Contact Hours: 36  
Classroom: 36

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Biomass Conversion; Energy  
Conservation; Energy Conversion; Energy  
Storage; Intro. to Solar Energy;  
Passive Solar Technology

Number of Times Taught: 4  
Average Enrollment: 35

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**INDIANA U OF PENNSYLVANIA**  
INDIANA, Pennsylvania 15701  
(412) 357-2100

(8810)

**SOLAR RELATED COURSES****Solar Energy**

Instructor: Hershman, K.E.  
(412) 357-2192

Course Number: PY 491  
Department: Physics  
Credits: 3  
Student Level: Junior or Senior  
Duration: 14 Weeks, 3.0 hrs per week  
Contact Hours: 42

Topics Covered Extensively: Appropriate  
Technology; Energy Conservation; Energy  
Conversion; Energy Storage; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Passive Solar Technology;

**PA ST U SHENANGO VLY CAM**  
SHARON, Pennsylvania 16146  
(412) 981-1640

**PROGRAMS AND CURRICULA****Solar Heating and Cooling Technology**

Degree: Short Course Certificate  
Contact: Houlihan, John F.  
(412) 981-1640

**SOLAR RELATED COURSES****Fundamentals of Solar Energy**

Instructor: Houlihan, J. F.  
(421) 981-1640

Course Number: PHYS. 296  
Department: Physics  
Program or Curriculum: Solar Heating and  
Cooling Technology  
Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 2.0 hrs per week  
Contact Hours: 20  
Classroom: 15  
Laboratory: 5

Topics Covered Extensively: Energy  
Conversion; Energy Storage; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Passive Solar Technology;  
Photovoltaics; Solar System Components;  
Solar Home Construction; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Space Heating; Space

## Pennsylvania

## Solar Energy Research Institute

Cooling; Wind Power, Central Systems  
Number of Times Taught: 2  
Average Enrollment: 12

### Intro.

Topics Covered Extensively: Intro. to Solar Energy; Space Heating; Wind Power, Central Systems

### Intro. to Solar Energy

Instructor: Houlihan, John F.  
(412) 981-1640

Course Number: PHYS. 297  
Department: Physics

Program or Curriculum: Solar Heating and Cooling Technology

Credits: 2  
Student Level: Freshman or Sophomore

Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30

Classroom: 28

Laboratory: 2

Topics Covered Extensively: Intro. to Solar Energy; Space Heating; Wind Power, Central Systems

Number of Times Taught: 2

Average Enrollment: 15

### Solar Heating and Cooling Technology

Instructor: Houlihan, J. F.  
(412) 981-1640

Course Number: PHYS. 297  
Department: Physics

Program or Curriculum: Solar Heating and Cooling Technology

Credits: 1

Student Level: All levels

Duration: 2 Weeks, 40.0 hrs per week

Contact Hours: 80

Classroom: 60

Laboratory: 12

Topics Covered Extensively: Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Marketing/Market Analysis; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Space Heating; Space Cooling

Number of Times Taught: 1

Average Enrollment: 30

PA STATE U ALLENTOWN CAM (3330)  
FOGELSVILLE, Pennsylvania 18051  
(215) 265-4811

### SOLAR RELATED COURSES

\*Solar Workshop-Cooling for Homes  
Topics Covered Extensively: Space Cooling

\*Solar Workshop-Domestic Hot Water Sys.  
Topics Covered Extensively: Domestic Hot Water

\*Solar Workshop-Passive Sol. Heat.  
Topics Covered Extensively: Passive Solar Technology

\*Solar Workshop-Solar Space Heat. Sys.  
Topics Covered Extensively: Space Heating

PA STATE U MAIN CAMPUS (6965)  
UNIVERSITY PARK, Pennsylvania 16802  
(814) 865-4700

### SOLAR RELATED COURSES

#### Solar Energy Building System Design

Instructor: Gilman, Stanley F.  
(814) 865-6394

Course Number: AE-497  
Department: Architectural Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 10 Weeks, 7.0 hrs per week

Contact Hours: 70

Classroom: 40

Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating

Number of Times Taught: 4

Average Enrollment: 21

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PENNSYLVANIA, U OF (3378)  
PHILADELPHIA, Pennsylvania 19104  
(215) 243-5000

### PROGRAMS AND CURRICULA

#### Energy Engineering

Degree: MS, Science in Engineering  
Contact: Eisenberg, Larry  
(215) 243-8507

Students Taking or Completing Offering:  
Educator, Researcher, Solar Engineer

### SOLAR RELATED COURSES

#### Energy Conversion

Instructor: Fegley, Ken  
Course Number: 566

Department: Systems Engineering

Program or Curriculum: Energy Engineering

Credits: 3

Student Level: College Graduate

Duration: 14 Weeks, 3.0 hrs per week

1978-79 National Solar Energy Education Directory

Pennsylvania

Contact Hours: 42

Classroom: 42

Topics Covered Extensively: Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer

Number of Times Taught: 4

Average Enrollment: 15

*Materials for Energy Engineering*

Instructor: Laird, Campbell

Course Number: 555

Department: Material Science

Program or Curriculum: Energy Engineering

Credits: 3

Student Level: College Graduate

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Classroom: 42

Topics Covered Extensively: Energy Storage; Materials Research

Number of Times Taught: 4

Average Enrollment: 15

*Prin. of Solar Energy Utilization*

Instructor: Lior, Noam

Course Number: 591

Department: Mechanical Engineering

Program or Curriculum: Energy Engineering

Credits: 3

Student Level: College Graduate

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology;

Biomass Conversion; Energy

Conservation; Energy Storage; Intro. to Solar Energy; Passive Solar Technology

Number of Times Taught: 4

Average Enrollment: 15

*Solid State Energy Conversion*

Instructor: Wolf, Martin

Course Number: EES 524

Department: Electrical Eng. & Science

Program or Curriculum: Energy Engineering

Credits: 3

Student Level: College Graduate

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy

Storage; Heat and Energy Transfer;

Intro. to Solar Energy; Photovoltaics;

Elec'l Generation, Central; Elec'l.

Generation; Small Scale

Number of Times Taught: 3

Average Enrollment: 15

*PHILA COLLEGE OF ART*

PHILADELPHIA, Pennsylvania 19102

(215) 893-3100

(3350)

**SOLAR RELATED COURSES**

*Alternate Energy-Solar*

Instructor: Andrews, Jack  
(215) 893-3170

Course Number: EN 212  
Department: Industrial and Environmental Design

Credits: 2

Student Level: All levels

Duration: 16 Weeks, 3.0 hrs per week

Contact Hours: 48

Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction

Number of Times Taught: 3

Average Enrollment: 18

**Saint Vincent College**

(3368)

LATROBE, Pennsylvania 15650  
(412) 539-9761

**SOLAR RELATED COURSES**

*Solar Energy*

Instructor: Heid, Roland L.  
(412) 539-9761

Department: Physics

Student Level: All levels

Duration: 6 Weeks, 3.0 hrs per week

Contact Hours: 18

Classroom: 18

**SWARTHMORE COLLEGE**

(3370)

SWARTHMORE, Pennsylvania 19081  
(215) 544-7900

**SOLAR RELATED COURSES**

*Alternate Energy Technologies*

Instructor: Bowler, D. L./ Barns, C./ Orthlieb, F.  
(215) 544-7900

Course Number: E 7

Department: Engineering

Credits: 1

Student Level: Freshman or Sophomore

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 70

Classroom: 52

Laboratory: 18

Number of Times Taught: 3

Average Enrollment: 6

*Solar Heating-Design*

Instructor: Bowler, D. L./ Barns, C./ Orthlieb, F.  
(215) 544-7900

Course Number: E 90

**Pennsylvania****Solar Energy Research Institute**

Department: Engineering  
 Credits: 1  
 Student Level: Junior or Senior  
 Duration: 14 Weeks, 4.0 hrs per week  
 Contact Hours: 104  
 Classroom: 52  
 Laboratory: 52  
 Topics Covered Extensively: Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 15

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**TEMPLE UNIVERSITY** (3371)  
 PHILADELPHIA, Pennsylvania 19122  
 (215) 787-7000

**SOLAR RELATED COURSES**

**Energy & Building Design**  
 Instructor: Ridenour, Steve  
 Department: Architecture  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Passive Solar Technology; Solar Systems Design; Space Heating; Wind Power, Small Systems

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**WESTMINSTER COLLEGE** (3392)  
 NEW WILMINGTON, Pennsylvania 16142  
 (412) 946-8761

**SOLAR RELATED COURSES**

**Energy Use and Alternate Energy Sources**  
 Instructor: Zehr, Floyd J.  
 Course Number: SC. 14  
 Department: Physics  
 Credits: 4  
 Student Level: All levels  
 Duration: 14 Weeks, 5.0 hrs per week  
 Contact Hours: 70  
 Classroom: 49  
 Laboratory: 21  
 Topics Covered Extensively: Alternate Energy Sources  
 Average Enrollment: 6

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**WIDENER COLLEGE** (3313)  
 CHESTER, Pennsylvania 19013  
 (215) 876-5551

**SOLAR RELATED COURSES**

**Energy I**  
 Instructor: Madonna, L. A.  
 (215) 876-5551  
 Course Number: 437  
 Department: Center of Engineering  
 Credits: 4

Student Level: Junior or Senior  
 Duration: 14 Weeks, 4.0 hrs per week  
 Contact Hours: 56  
 Classroom: 42  
 Laboratory: 14  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology  
 Average Enrollment: 15

**Energy II**  
 Instructor: Madonna, L. A.  
 (215) 876-5551  
 Course Number: 438  
 Department: Center of Engineering  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 14 Weeks, 4.0 hrs per week  
 Contact Hours: 56  
 Classroom: 42  
 Laboratory: 14  
 Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer

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**WILKES COLLEGE** (3394)  
 WILKES-BARRE, Pennsylvania 18703  
 (717) 824-4651

**SOLAR RELATED COURSES**

**Alternate Energy Sources**  
 Instructor: Nejib, U.R.  
 (717) 824-4651  
 Course Number: EE390  
 Department: Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 46  
 Classroom: 28  
 Topics Covered Extensively: Alternate Energy Sources; Heat and Energy Transfer; Passive Solar Technology; Photovoltaics; Elec'l Generation, Central; Wind Power, Small Systems  
 Number of Times Taught: 2  
 Average Enrollment: 15

**Energy Cons.-Alts. and Methods**  
 Instructor: Nejib, Umid R.  
 (717) 824-4651  
 Course Number: E0594  
 Department: Engineering  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 3 Weeks, 38.0 hrs per week  
 Contact Hours: 114  
 Classroom: 36  
 Laboratory: 24  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Intro. to Solar Energy; Solar Energy Policy  
 Development; Elec'l Generation, Central  
 Number of Times Taught: 1  
 Average Enrollment: 32

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**Community/Junior Colleges**

**BUCKS COUNTY CHTY COLLEGE** (3239)  
 NEWTON, Pennsylvania 18940  
 (215) 968-5861

**SOLAR RELATED COURSES***Understanding Solar Energy*

Instructor: Greenhaugh, Sam  
 Department: Science  
 Student Level: All levels  
 Duration: 7 Weeks, 3.0 hrs per week  
 Contact Hours: 21  
 Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water  
 Number of Times Taught: 1  
 Average Enrollment: 35

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**DELAWARE CO CHTY COLLEGE** (7110)  
 MEDIA, Pennsylvania 19063  
 (215) 353-5400

**SOLAR RELATED COURSES**

*Conserving Energy Saves Consumer Dollars*  
 Instructor: Habrey, Marjorie  
 Department: Community Education  
 Student Level: All levels  
 Duration: 2 Weeks, 10.0 hrs per week  
 Contact Hours: 20

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**HARRISBURG AREA CC** (3273)  
 HARRISBURG, Pennsylvania 17110  
 (717) 236-9533

**PROGRAMS AND CURRICULA**

*Solar Heating*  
 Degree: Certificate-non-cred. Adult Ed.  
 Contact: Brown, Hazel  
 (717) 236-9535  
 Students Taking or Completing Offering: Do-it-yourself Homeowner, Other

**SOLAR RELATED COURSES**

**Sol. Heat.-Food, Heat Prod. Greenhouse**  
 Department: Community Resources Institute  
 Program or Curriculum: Solar Heat  
 Student Level: All levels  
 Duration: 3 Weeks, 3.0 hrs per week  
 Contact Hours: 9  
 Classroom: 9  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Elec'l Generation, Small Scale; Process Heat; Industrial; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 20

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**KEYSTONE JUNIOR COLLEGE** (3280)  
 LA PLUME, Pennsylvania 18440  
 (717) 945-5141

**PROGRAMS AND CURRICULA**

*Solar Engineering Technology*  
 Degree: AD, Applied Sci. in Sol. Engr. Tech.  
 Contact: Kutch, Dennis/ Cupilleri, Tom  
 (717) 945-5141  
 Students Taking or Completing Offering: Solar Technician

**SOLAR RELATED COURSES**

*Siz., Inst., and Oper.-Sol. Heat. (Res. Bl.)*  
 Instructor: Kutch, Dennis  
 (717) 945-5141  
 Department: Solar Energy Study & Res. Cnt.  
 Program or Curriculum: Solar Engineering Technology  
 Student Level: All levels  
 Duration: 2 Weeks, 36.0 hrs per week  
 Contact Hours: 72  
 Classroom: 30  
 Laboratory: 42  
 Topics Covered Extensively: Energy Conservation; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Home Construction; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating

**Pennsylvania****Solar Energy Research Institute****Solar Hydronic Systems/Solar Air Systems**

**Instructor:** Kutch, Dennis  
(717) 945-5141  
**Course Number:** 220  
**Department:** Solar Energy Study & Res. Cnt.  
**Program or Curriculum:** Solar Engineering Technology  
**Credits:** 3  
**Student Level:** All levels  
**Duration:** 16 Weeks, 3.0 hrs per week  
**Contact Hours:** 48  
**Classroom:** 30  
**Laboratory:** 18  
**Topics Covered Extensively:** Energy Conservation; Heat and Energy Transfer; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Economics; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating

**Train.-Des. of Sol. Heat. Sys. for Bldgs.**  
**Instructor:** Kutch, Dennis  
(717) 945-5141  
**Department:** Solar Energy Study & Res. Cnt.  
**Program or Curriculum:** Solar Engineering Technology  
**Student Level:** Junior or Senior  
**Duration:** 2 Weeks, 36.0 hrs per week  
**Contact Hours:** 72  
**Classroom:** 42  
**Laboratory:** 30  
**Topics Covered Extensively:** Energy Conservation; Energy Storage; Heat and Energy Transfer; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating

**LEHIGH CO CITY COLLEGE**  
SCHNECKSVILLE, Pennsylvania 18078  
(215) 799-2121

**PROGRAMS AND CURRICULA**

**Alternate Energy Technologies**  
**Degree:** AD, Applied Science  
**Contact:** Walker, J. Robert  
(215) 799-1515

**SOLAR RELATED COURSES**

**Alternate Energy Technologies**  
**Instructor:** Walker, J. Robert  
(215) 799-1515  
**Course Number:** PHY 102  
**Department:** Physics and Technologies  
**Program or Curriculum:** Alternate Energy

**Technologies:** 4  
**Credits:** Freshman or Sophomore  
**Duration:** 16 Weeks, 6.0 hrs per week  
**Contact Hours:** 96  
**Classroom:** 48  
**Laboratory:** 48  
**Topics Covered Extensively:** Alternate Energy Sources; Passive Solar Technology; Solar System Components; Domestic Hot Water

**NORTHAMPTON CO AREA CC**  
BETHLEHEM, Pennsylvania 18017  
(215) 865-5351

**SOLAR RELATED COURSES**

**Des. & Util. of Emerging Ener. Sources**  
**Instructor:** Ensminger, Frank E.  
(215) 865-5351  
**Department:** Vocational/Technical  
**Credits:** 3  
**Student Level:** Freshman or Sophomore  
**Duration:** 15 Weeks, 6.0 hrs per week  
**Contact Hours:** 90  
**Classroom:** 30  
**Laboratory:** 60  
**Topics Covered Extensively:** Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling

**WILLIAMSPORT AREA CC**  
WILLIAMSPORT, Pennsylvania 17701  
(717) 326-3761

**PROGRAMS AND CURRICULA**

**Plumbing and Heating**  
**Degree:** Certificate of Applied Arts  
**Contact:** Krause, George C.  
(717) 326-3761  
**Students Taking or Completing Offering:** Installer-Residential (Solar System), Plumber, Trade Specialty

**SOLAR RELATED COURSES**

**Plumbing and Heating**  
**Instructor:** Beatty, Franklin P.  
**Course Number:** 84C  
**Department:** Building Technology, Plumbing and Heating  
**Program or Curriculum:** Plumbing and Heating

Student Level: Freshman or Sophomore  
Duration: 8 Weeks, 25.0 hrs per week  
Contact Hours: 200  
Classroom: 64  
Laboratory: 136  
Number of Times Taught: 4  
Average Enrollment: 18

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Program or Curriculum: Energy Technology  
Credits: 4  
Student Level: High School Graduate  
Duration: 12 Weeks, 5.0 hrs per week  
Contact Hours: 60  
Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Intro. to Solar Energy; Wind Power, Small Systems  
Number of Times Taught: 1  
Average Enrollment: 35

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### Vocational/Technical Colleges

**PENNSYLVANIA INSTITUTE OF TECHNOLOGY (90180)**  
414 Sansom St.  
Upper Darby, Pennsylvania 19082

#### PROGRAMS AND CURRICULA

**Energy Technology**  
Degree: AD, Specialized Technology  
Contact: Thomas, Richard B.  
Students Taking or Completing Offering:  
Solar Technician, Electrician

#### SOLAR RELATED COURSES

##### Advanced Solar Design

Instructor: Thomas, Richard  
(215) 352-7100  
Course Number: K  
Program or Curriculum: Energy Technology  
Credits: 2  
Student Level: High School Graduate  
Duration: 12 Weeks, 4.0 hrs per week  
Contact Hours: 48  
Topics Covered Extensively: Solar Collector Evaluation/Design; Solar Systems Design  
Number of Times Taught: 1  
Average Enrollment: 35

##### Basic Solar Design

Instructor: Thomas, Richard B.  
(215) 352-7100  
Course Number: D  
Program or Curriculum: Energy Technology  
Credits: 1  
Student Level: High School Graduate  
Duration: 12 Weeks, 5.0 hrs per week  
Contact Hours: 60  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Home Construction; Solar Collector Evaluation/Design  
Number of Times Taught: 1  
Average Enrollment: 35

##### Energy Conversion

Instructor: Thomas, Richard  
(215) 352-7100  
Course Number: B

#### Other Educational Institutions

**NEW ENGLAND FUEL INSTITUTE (90230)**  
20 Sumner St., Box 888  
Watertown, Pennsylvania 02172

#### SOLAR RELATED COURSES

\***Basic Solar Heating Tech.**  
Topics Covered Extensively: Space Heating

\***Solar Installation and Maintenance**

Instructor: Tavino, R./ Taylor, R.  
(617) 924-1000  
Student Level: All levels  
Duration: 4 Weeks, 40.0 hrs per week  
Contact Hours: 160  
Classroom: 80  
Laboratory: 80  
Topics Covered Extensively: Solar System Components; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Space Heating

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**PA STATE U CAPITOL CAMPUS (6814)**  
MIDDLETON, Pennsylvania 17057  
(717) 787-7737

#### SOLAR RELATED COURSES

**Solar Energy-Practical Application**

Instructor: Aungst, William  
(717) 787-7956  
Course Number: MET 420  
Department: Mechanical Design  
Engineering Technology  
Credits: 4  
Student Level: Junior or Senior  
Duration: 10 Weeks, 5.0 hrs per week  
Contact Hours: 50  
Classroom: 50  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components;

Solar Economics; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Domestic Hot Water; Space  
Heating  
Number of Times Taught: 2  
Average Enrollment: 33

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THE SCHOOL OF LIVING (90290)  
PO Box 3233  
York, Pennsylvania 17402

#### SOLAR RELATED COURSES

\*Alternative Energy  
Topics Covered Extensively: Alternate  
Energy Sources

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TRIANGLE INSTITUTE OF TECHNOLOGY, INC (90110)  
635 Smithfield St.  
Pittsburgh, Pennsylvania 15222  
(412) 255-6170

#### PROGRAMS AND CURRICULA

##### Solar Energy Systems

Degree: AD, Specialized Technology  
Contact: Knoyer, Ralph  
(412) 255-6170

Students Taking or Completing Offering:  
Solar Technician, Electrician, Plumber,  
Sheet Metal Worker

#### SOLAR RELATED COURSES

##### Solar Energy Systems

Instructor: Knoyer, Ralph  
(412) 255-6170

Course Number: 400.0

Department: Refrig., Heat., Vent.,  
and Air Cond.

Program or  
Curriculum: Solar Energy Systems

Credits: 10

Student Level: High School Graduate

Duration: 16 Weeks, 25.0 hrs per week

Contact Hours: 390

Classroom: 90

Laboratory: 300

Topics Covered Extensively: Solar  
Systems Design; Solar Systems  
Installation; Solar Systems  
Maintenance; Solar Systems Testing and  
Evaluation

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**Colleges/Universities**

PR MAYAGUEZ,U OF  
MAYAGUEZ, Puerto Rico  
(809) 832-4040

(3944)

**PROGRAMS AND CURRICULA****Research in Solar Energy-Related Areas**

Degree: PHD, MS, OTHER, Sciences  
Contact: Rodrigues, Pablo  
(809) 832-4040

**Students Taking or Completing Offering:**  
**Educator, Researcher****SOLAR RELATED COURSES****Physics of Energy Systems**

Instructor: Azziz, Nestor  
(809) 832-4040

Course Number: PHYS 428

Department: Physics/Arts. and  
Sciences

Program or  
Curriculum: Research in Solar  
Energy-Related Areas

Credits: 3

Student Level: Freshman or Sophomore

Duration: 15 Weeks, 5.0 hrs per week

Contact Hours: 75

Classroom: 30

Laboratory: 45

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conversion; Heat and Energy  
Transfer

Number of Times Taught: 2

Average Enrollment: 6

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Rhode Island

Solar Energy Research Institute

**Colleges/Universities**

BROWN UNIVERSITY  
PROVIDENCE, Rhode Island  
(401) 863-1000

(3401)

**SOLAR RELATED COURSES**

*Photovoltaic Solar Cells*

Instructor: Loferski, Joseph J.  
(401) 863-2671  
Course Number: EN 292  
Department: Engineering  
Credits: 4  
Student Level: College Graduate  
Duration: 20 Weeks, 3.0 hrs per week  
Contact Hours: 60  
Classroom: 60  
Topics Covered Extensively:  
Photovoltaics  
Number of Times Taught: 1  
Average Enrollment: 10

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RHODE ISLAND, U OF  
KINGSTON, Rhode Island  
(401) 792-1000

(3414)

**SOLAR RELATED COURSES**

*Residential Solar Heating*

Instructor: Wilson, C. J.  
(401) 792-2186  
Course Number: EXT  
Department: Engineering (Extension)  
Student Level: All levels  
Duration: 8 Weeks, 3.0 hrs per week  
Contact Hours: 24  
Topics Covered Extensively: Heat and  
Energy Transfer; Intro. to Solar  
Energy; Solar System Components; Solar  
Economics; Solar Home Construction;  
Solar Collector Evaluation/Design;  
Space Heating  
Number of Times Taught: 3  
Average Enrollment: 50

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**Vocational/Technical Colleges**

HALL INSTITUTE  
330 Harborside Blvd.  
Providence, Rhode Island 02905

(90120)

**PROGRAMS AND CURRICULA**

*Solar Energy Seminar*

Degree: Certificate of Completion  
Contact: Rogers, Charles K.  
(401) 461-6000  
Students Taking or Completing Offering:

Architect, Educator, Do-it-yourself  
Homeowner

**SOLAR RELATED COURSES**

*Solar Energy Seminar*

Instructor: Rogers, Charles K.  
(401) 461-6000

Program or Curriculum: Solar Energy Seminar  
Student Level: High School Graduate  
Duration: 4 Weeks, 3.0 hrs per week  
Contact Hours: 12  
Classroom: 12  
Topics Covered Extensively: Energy  
Conservation; Energy Conversion; Energy  
Storage; Heat and Energy Transfer;  
Intro. to Solar Energy; Plumbing  
Techniques; Solar System Components;  
Solar Economics; Solar Home  
Construction; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Installation;  
Domestic Hot Water; Space Heating  
Number of Times Taught: 8  
Average Enrollment: 70

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## Colleges/Universities

**CENTRAL WESLEYAN COLLEGE**  
CENTRAL, South Carolina 29630 -  
(803) 639-2453

(3422)

## SOLAR RELATED COURSES

**Energy**

Instructor: Schmitz, J. L.  
(803) 639-2453  
Department: Science/Social Science  
Credits: 3  
Student Level: All levels  
Duration: 15 Weeks; 3.0 hrs per week  
Contact Hours: 45  
Classroom: 30  
Laboratory: 15  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Solar Economics

**Solar Energy**

Instructor: Schmitz, J. L.  
(803) 639-2453  
Course Number: 400  
Department: Science  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks; 3.0 hrs per week  
Contact Hours: 45  
Classroom: 5  
Laboratory: 40  
Topics Covered Extensively: Solar Collector Evaluation/Design; Solar Systems Design; Space Heating  
Number of Times Taught: 2  
Average Enrollment: 14

**CLEMSON UNIVERSITY**

CLEMSON, South Carolina 29631  
(803) 656-3311

(3425)

## PROGRAMS AND CURRICULA

**Energy Systems**

Degree: PhD, MS, Science, Philosophy, Mechanical Engineering  
Contact: Bishop, Eugene H.  
(803) 656-3470

Students Taking or Completing Offering:  
Researcher, Solar Engineer; Mechanic  
on Electrical Contractor; Contractor

## SOLAR RELATED COURSES

**Energy Conversion**

Instructor: Lathrop, J. W.  
(803) 656-3371  
Course Number: 403  
Department: Electrical and Computer Engineering  
Program or Curriculum: Energy Systems  
Credits: 3  
Student Level: Junior or Senior

Duration: 14 Weeks; 3.0 hrs per week  
Contact Hours: 42

Classroom: 42  
Topics Covered Extensively: Energy Conversion; Energy Storage; Intro. to Solar Energy; Photovoltaics; Solar Systems Design; Elec'l Generation Small Scale

Number of Times Taught: 5

Average Enrollment: 20

**Energy Conversion**

Instructor: Hester, J. C.  
(803) 656-3291  
Course Number: ME 816  
Department: Mechanical Engineering  
Program or Curriculum: Energy Systems  
Credits: 3  
Student Level: College Graduate  
Duration: 3 Weeks; 16.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Photovoltaics; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design  
Number of Times Taught: 5  
Average Enrollment: 6

**Energy Sources for the Future**

Instructor: McKelvey, John P.  
(803) 656-3417  
Course Number: PHYS 245  
Department: Physics and Astronomy  
Program or Curriculum: Energy Systems  
Credits: 3  
Student Level: All levels  
Duration: 14 Weeks; 3.0 hrs per week  
Contact Hours: 42  
Classroom: 42  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion  
Number of Times Taught: 5  
Average Enrollment: 50

**SC MAIN CAMPUS, U OF**  
COLUMBIA, South Carolina 29208  
(803) 777-0411

(3448)

## SOLAR RELATED COURSES

**Solar Heating and Cooling**

Instructor: McMillan  
(803) 777-2252  
Course Number: 536  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 14 Weeks; 3.0 hrs per week  
Contact Hours: 42  
Classroom: 36

**South Carolina****Solar Energy Research Institute**

Laboratory: 6  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar System Design  
 Number of Times Taught: 3  
 Average Enrollment: 40

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**Community/Junior Colleges**

**MIDLANDS TECH COLLEGE** (3993)  
 COLUMBIA, South Carolina 29250  
 (803) 796-1266

**SOLAR RELATED COURSES**

**Air Conditioning**  
 Instructor: Sallman, John B.  
 Course Number: MET 232  
 Department: Mechanical Engineering  
 Credits: 4  
 Student Level: All levels  
 Duration: 11 Weeks, 6.0 hrs per week  
 Contact Hours: 66  
 Classroom: 33  
 Laboratory: 33  
 Number of Times Taught: 2  
 Average Enrollment: 10

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**PIEDMONT TECH COLLEGE** (3992)  
 GREENWOOD, South Carolina 29646  
 (803) 223-8357

**SOLAR RELATED COURSES**

**Solar Energy for Climate Control**  
 Instructor: Ledford, John  
 Course Number: ACR 204  
 Department: Heating and Air Conditioning  
 Credits: 4  
 Student Level: Freshman or Sophomore  
 Duration: 11 Weeks, 4.0 hrs per week  
 Contact Hours: 44  
 Classroom: 44  
 Topics Covered Extensively: Energy Conservation; Energy Storage; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Space Heating  
 Number of Times Taught: 3  
 Average Enrollment: 25

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**TRI-COUNTY TECH COLLEGE** (4926)  
 PENDLETON, South Carolina 29670  
 (803) 646-3227

**SOLAR RELATED COURSES**

**Solar Energy and The Home Owner**  
 Instructor: Fairey, Phillip W.  
 Course Number: ACR-240  
 Department: Continuing Education  
 Student Level: All levels  
 Duration: 12 Weeks, 2.0 hrs per week  
 Contact Hours: 24

**Solar Energy Applications**  
 Instructor: Edwards, Joe  
 Course Number: ACR-240  
 Department: Air Conditioning and Refrigeration  
 Credits: 4  
 Student Level: Freshman or Sophomore  
 Duration: 11 Weeks, 8.0 hrs per week  
 Contact Hours: 88  
 Classroom: 22  
 Laboratory: 66  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Plumbing Techniques; Solar System Components; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water

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**YORK TECHNICAL COLLEGE** (3996)  
 ROCK HILL, South Carolina 29730  
 (803) 328-3843

**PROGRAMS AND CURRICULA**

**Conversion of Solar Energy**  
 Degree: Air Conditioning, Refrigeration, and Heating  
 Contact: White, Lacy  
 (803) 324-3130  
 Students Taking or Completing Offering:  
 Installer-Residential (Solar System),  
 Installer-Commercial (Solar System),  
 Trade Specialty

**SOLAR RELATED COURSES**

**Conversion of Solar Energy**  
 Instructor: White, Lacy  
 Course Number: ACR 204  
 Department: Air Conditioning  
 Program or Curriculum: Conversion of Solar Energy  
 Credits: 4  
 Student Level: High School Graduate  
 Duration: 11 Weeks, 6.0 hrs per week  
 Contact Hours: 88  
 Classroom: 22  
 Laboratory: 66

233

**Topics Covered Extensively:** Plumbing Techniques; Solar Systems Installation; Domestic Hot Water; Space Heating  
**Number of Times Taught:** 1  
**Average Enrollment:** 18

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**Duration:** 11 Weeks, 4.0 hrs per week  
**Contact Hours:** 44  
**Classroom:** 44  

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**Vocational/Technical Colleges**

**BEAUFORT TECH ED CENTER** (9910)  
 BEAUFORT, South Carolina 29902  
 (803) 524-3380

**PROGRAMS AND CURRICULA**

**Refrigeration and Air Conditioning-Solar Energy Appl.**  
**Degree:** AD, Refrigeration and Air Conditioning, General Tech.  
**Contact:** Spivey, Edward F.  
 (803) 524-0148  
**Students Taking or Completing Offering:** Installer-Residential (Solar System), Solar Technician, Trade Specialty

**SOLAR RELATED COURSES**

**Solar Energy Application**  
**Instructor:** Spivey, E. F.  
 (803) 524-0148  
**Course Number:** ARC 240  
**Department:** Refrigeration and Air Conditioning  
**Program or Curriculum:** Refrigeration and Air Conditioning-Solar Energy Appl.  
**Credits:** 4  
**Student Level:** High School Graduate  
**Duration:** 11 Weeks, 6.0 hrs per week  
**Contact Hours:** 66  
**Classroom:** 33  
**Laboratory:** 33  
**Topics Covered Extensively:** Heat and Energy Transfer

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**CHESTERFIELD-MARLBORO TECH** (7602)  
 CHERAW, South Carolina 29520  
 (803) 537-5266

**SOLAR RELATED COURSES**

**Climate Control Technology**  
**Instructor:** Smith, Donald R.  
 (803) 537-5266  
**Course Number:** 204  
**Department:** Air Cond., Ref. and Heating  
**Credits:** 4  
**Student Level:** Freshman or Sophomore

**FLORENCE DARLINGTON TECH** (3990)  
 FLORENCE, South Carolina 29502  
 (803) 662-8151

**PROGRAMS AND CURRICULA**

**Conversion of Solar Energy**  
**Degree:** Climate Control  
**Contact:** Jackson, Edward  
 (803) 662-8151

**SOLAR RELATED COURSES**

**Conversion of Solar Energy**  
**Instructor:** Jackson, Edward  
 (803) 662-8151  
**Course Number:** ARC 204  
**Department:** Industrial Trades - Climate Control  
**Program or Curriculum:** Conversion of Solar Energy  
**Credits:** 4  
**Student Level:** High School Graduate  
**Duration:** 11 Weeks, 6.0 hrs per week  
**Contact Hours:** 66  
**Classroom:** 33  
**Laboratory:** 33  
**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Intro. to Solar Energy; Solar System Components; Solar Collector  
**Evaluation/Design:** Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water  
**Number of Times Taught:** 4  
**Average Enrollment:** 25

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**GREENVILLE TECH COLLEGE** (3991)  
 GREENVILLE, South Carolina 29606  
 (803) 242-3170

**SOLAR RELATED COURSES**

**Refrigeration Tech. Courses**  
**Department:** Refrigeration Tech.

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**South Carolina**

**HORRY-GEORGETOWN TECH C**  
CONWAY, South Carolina 29526  
(803) 347-3186

(4925)

**SOLAR RELATED COURSES**

\**Air Condition Tech. Courses*  
Department: Air Cond. Tech.

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**SPARTANBURG TECH COLLEGE**  
SPARTANBURG, South Carolina 29303  
(803) 576-5770

(3994)

**SOLAR RELATED COURSES**

*Basic Solar Heating*

Instructor: Watts, John R.  
Department: Continuing Education  
Student Level: All levels  
Duration: 2 Weeks, 4.0 hrs per week  
Contact Hours: 8  
Classroom: 8  
Topics Covered Extensively: Intro. to  
Solar Energy; Solar System Components;  
Space Heating  
Number of Times Taught: 2  
Average Enrollment: 35

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**SUMTER AREA TECH COLLEGE**  
SUMTER, South Carolina 29150  
(803) 773-9371

(3995)

**SOLAR RELATED COURSES**

\**Air Cond. Tech. Courses*  
Department: Air Conditioning Tech.

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**Other Educational Institutions**

**SC'AT SUMTER, U OF**  
SUMTER, South Carolina 29150  
(803) 777-6865

(12112)

**SOLAR RELATED COURSES**

*Introduction to Engineering*

Instructor: Herburn, R.C.  
(803) 775-6341  
Course Number: ENGR110  
Department: Engineering  
Credits: 3  
Student Level: High School Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45

**Solar Energy Research Institute**

Number of Times Taught: 4  
Average Enrollment: 17

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**TRIDENT TECHNICAL COLLEGE**

(8818)

P O BOX 10367  
CHARLESTON, South Carolina 29411  
(803) 553-2375

**PROGRAMS AND CURRICULA**

*Air Conditioning-Refrigeration*

Degree: Air  
Conditioning-Refrigeration  
Contact: Moore, James L.  
(803) 572-6180  
Students Taking or Completing Offering:  
Installer-Residential (Solar System)

**SOLAR RELATED COURSES**

*Solar Heating*  
Instructor: Moore, James L.  
(803) 572-6180  
Department: Air  
Conditioning-Refrigeration  
Program or Curriculum: Air  
Conditioning-Refrigeration  
Student Level: High School Graduate  
Duration: 3 Weeks, 30.0 hrs per week  
Contact Hours: 90  
Classroom: 30  
Laboratory: 60  
Topics Covered Extensively: Heat and  
Energy Transfer; Solar System  
Components; Solar Collector  
Evaluation/Design; Domestic Hot Water;  
Space Heating

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**Colleges/Universities**

**SD MAIN CAMPUS, U OF** (3474)  
 VERMILLION, South Dakota 57069  
 (605) 677-5641

**SOLAR RELATED COURSES***The Energy Crisis*

Instructor: Jones, Robert W.  
 (605) 624-5649  
 Course Number: ESC/PHY 385  
 Department: Earth Science/Physics  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Alternate  
 Energy Sources; Energy Conversion  
 Number of Times Taught: 5  
 Average Enrollment: 18

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**SD SCH MINES & TECHNOLOGY** (3470)  
 RAPID CITY, South Dakota 57701  
 (605) 394-2411

**SOLAR RELATED COURSES***Energy Conversion Technology*

Instructor: Cheung  
 (605) 394-2408  
 Course Number: ME 499  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Alternate  
 Energy Sources; Energy Conservation;  
 Energy Conversion; Heat and Energy  
 Transfer; Intro. to Solar Energy; Solar  
 Collector Evaluation/Design; Solar  
 Systems Design  
 Number of Times Taught: 2  
 Average Enrollment: 13

*Solar Energy*

Instructor: Chiang, C. W.  
 (605) 394-2401  
 Course Number: ME 619  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Alternate  
 Energy Sources; Energy Conservation;  
 Energy Conversion; Heat and Energy  
 Transfer; Intro. to Solar Energy; Solar  
 Collector Evaluation/Design; Solar  
 Systems Design  
 Number of Times Taught: 2  
 Average Enrollment: 11

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**SD STATE UNIVERSITY (3471)**

BROOKINGS, South Dakota 57007  
 (605) 688-4111

**SOLAR RELATED COURSES***Design of Thermal Systems*

Instructor: Eno, B.  
 (605) 688-4817  
 Course Number: ME 418  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 42  
 Classroom: 42  
 Topics Covered Extensively: Energy  
 Conversion; Energy Storage; Heat and  
 Energy Transfer; Intro. to Solar  
 Energy; Solar System Components; Solar  
 Collector Evaluation/Design; Solar  
 Systems Design; Domestic Hot Water;  
 Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 12

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Tennessee

Solar Energy Research Institute

**Colleges/Universities**

**MEMPHIS STATE UNIVERSITY** (3509)  
MEMPHIS, Tennessee 38152  
(901) 454-2000

**SOLAR RELATED COURSES**

**Fundamentals of Solar Engineering**

Instructor: Perry, Edward H.  
(901) 454-2174  
Course Number: MECH 4317  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design  
Number of Times Taught: 4  
Average Enrollment: 20

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**MIDDLE TENN ST. UNIVERSITY** (3510)  
MURFREESBORO, Tennessee 37130  
(615) 898-2300

**SOLAR RELATED COURSES**

**Solar Home Design**

Instructor: Mathis, William H.  
(615) 898-2778  
Course Number: 470C  
Department: Industrial Studies  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 40  
Laboratory: 8  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar-Home Construction; Space Heating  
Number of Times Taught: 2  
Average Enrollment: 17

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**TENN AT CHATTANOOGA, U OF** (3529)  
CHATTANOOGA, Tennessee 37401  
(615) 755-4011

**SOLAR RELATED COURSES**

**Energy Systems**

Instructor: Russell, Lynn D.  
(615) 755-4121  
Course Number: 586  
Department: School of Engineering  
Credits: 4  
Student Level: College Graduate

Duration: 15 Weeks, 4.0 hrs per week  
Contact Hours: 60  
Topics Covered Extensively: Energy Conversion  
Number of Times Taught: 2  
Average Enrollment: 10

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**TENNESSEE KNOXVILLE, U OF** (3530)  
KNOXVILLE, Tennessee 37916  
(615) 974-2591

**SOLAR RELATED COURSES**

**Solar Energy Utilization**

Course Number: EN4740  
Department: Mech. & Aero Eng'r  
Credits: 3  
Student Level: Junior or Senior  
Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Space Heating; Space Cooling

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**TENNESSEE NASHVILLE, U OF** (3533)  
NASHVILLE, Tennessee 37203  
(615) 251-1111

**SOLAR RELATED COURSES**

**Energy Conversion Systems**

Instructor: Knight, Charles V.  
(615) 251-1341  
Course Number: ME4150  
Department: Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy  
Number of Times Taught: 5  
Average Enrollment: 22

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**TENNESSEE TECHNOLOGICAL U** (3523)  
COOKEVILLE, Tennessee 38501  
(615) 528-3241

**SOLAR RELATED COURSES**

**Solar Energy Processes and Systems**

Instructor: Hewitt, Jr. Rudy C.  
(615) 528-3269  
Course Number: ME541

Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 12 Weeks, 3.0 hrs per week  
 Contact Hours: 36  
 Classroom: 36  
 Topics Covered Extensively: Energy Storage; Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 4  
 Average Enrollment: 12

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VANDERBILT UNIVERSITY  
 NASHVILLE, Tennessee 37240  
 (615) 322-7311

#### PROGRAMS AND CURRICULA

\*Electrical Eng'r.

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#### Community/Junior Colleges

CLEVELAND ST CHTY COLLEGE  
 CLEVELAND, Tennessee 37311  
 (615) 472-7141

#### PROGRAMS AND CURRICULA

*Fac. Dev. Workshop in Energy Alternatives*

Contact: Guy, Buford  
 (615) 472-7141

Students Taking or Completing Offering:  
 Educator

#### SOLAR RELATED COURSES

*Fac. Dev. Workshop in Energy Alternatives*

Instructor: Guy, Buford  
 (615) 472-7141  
 Department: Community Services and Continuing Education  
 Program or Curriculum: Fac. Dev. Workshop in Energy Alternatives  
 Credits: 6  
 Student Level: College Graduate  
 Duration: 2 Weeks, 30.0 hrs per week  
 Contact Hours: 60  
 Classroom: 50  
 Laboratory: 10  
 Topics Covered Extensively: Alternate Energy Sources

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MOTLOW STATE CHTY COLLEGE  
 TULLAHOMA, Tennessee 37388  
 (615) 455-8511

(6836)

#### PROGRAMS AND CURRICULA

*Energy Engineering Technology*

Degree: AD, Engr. Tech.-Ener. Engr.  
 Emphasis  
 Contact: Thornton, Otis B.  
 (615) 455-8511  
 Students Taking or Completing Offering:  
 Installer-Residential (Solar System); Researcher, Solar Technician

#### SOLAR RELATED COURSES

*Solar Energy Applications*

Instructor: Lowndes, Richard  
 (615) 455-8511  
 Course Number: ERG 205  
 Department: Career Education  
 Program or Curriculum: Energy Engineering Technology  
 Credits: 3  
 Student Level: All levels  
 Duration: 10 Weeks, 5.0 hrs per week  
 Contact Hours: 50  
 Classroom: 20  
 Laboratory: 30  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating

*Solar Energy Theory*

Instructor: Lowndes, Richard  
 (615) 455-8511  
 Course Number: ERG 204  
 Department: Career Education  
 Program or Curriculum: Energy Engineering Technology  
 Credits: 4  
 Student Level: All levels  
 Duration: 10 Weeks, 5.0 hrs per week  
 Contact Hours: 50  
 Classroom: 20  
 Laboratory: 30  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating

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**Colleges/Universities**

**AMERICAN TECHNOLOGICAL U** (11854)  
 KILLEEN, Texas 76541  
 (817) 526-1261

**PROGRAMS AND CURRICULA***Energy Management Sciences*

Degree: MS, Science  
 Contact: Smith, Robin/ Kinzel, John  
 (817) 526-1171

Students Taking or Completing Offering:  
 Educator, Researcher, Solar Engineer,  
 Other

**SOLAR RELATED COURSES***Alternative Energy Sources*

Department: Mgmt. & Business  
 Program or  
 Curriculum: Energy Management Sciences  
 Student Level: College Graduate  
 Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conversion; Wind-Power, Small Systems

*Applied Solar Energy*

Department: Mgmt. & Business  
 Program or  
 Curriculum: Energy Management Sciences  
 Student Level: College Graduate  
 Topics Covered Extensively: Energy Conservation; Energy Storage; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Process Heat; Industrial; Space Heating; Space Cooling

*Basics of Solar Energy*

Department: Mgmt. & Business  
 Program or  
 Curriculum: Energy Management Sciences  
 Student Level: College Graduate  
 Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Space Cooling

*Computer Simulation*

Department: Mgmt. & Business  
 Program or  
 Curriculum: Energy Management Sciences  
 Student Level: College Graduate

*Direct Energy Conversion*

Department: Mgmt. & Business  
 Program or  
 Curriculum: Energy Management

**Sciences**

Student Level: College Graduate  
 Topics Covered Extensively: Energy Conservation; Energy Conversion; Intro. to Solar Energy; Photovoltaics

*Economics of Alt. Ener. Sources*

Department: Mgmt. & Business  
 Program or

Curriculum: Energy Management Sciences

Student Level: College Graduate  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Solar Economics

*Legislative Aspects of Solar Tech.*

Department: Mgmt. & Business

Program or  
 Curriculum: Energy Management Sciences

Student Level: College Graduate  
 Topics Covered Extensively: Solar Law/Legislation

*Mgmt. of Energy Res. and Development*

Instructor: French, Robert L.  
 (817) 526-1271

Course Number: MSA5382

Department: Management & Business

Program or  
 Curriculum: Energy Management Sciences

Credits: 3  
 Student Level: College Graduate  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Solar Economics  
 Number of Times Taught: 1  
 Average Enrollment: 15

*Passive Systems Design*

Department: Mgmt. & Business  
 Program or  
 Curriculum: Energy Management Sciences

Student Level: College Graduate  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Solar Home Construction; Space Heating; Space Cooling

*Solar Agricultural Apps.*

Department: Mgmt. & Business  
 Program or  
 Curriculum: Energy Management Sciences

Student Level: College Graduate  
 Topics Covered Extensively: Passive Solar Technology; Process Heat, Agricultural

*Solar Heating and Cooling*

Department: Mgmt. & Business  
 Program or  
 Curriculum: Energy Management

**Sciences**  
**Student Level:** College Graduate  
**Topics Covered Extensively:** Energy Storage; Materials Research; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling

**Solar Systems Design**  
**Department:** Mgmt. & Business  
**Program or**  
**Curriculum:** Energy Management Sciences

**Student Level:** College Graduate  
**Topics Covered Extensively:** Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation

**Solar Thermal Storage**  
**Department:** Mgmt. & Business  
**Program or**  
**Curriculum:** Energy Management Sciences  
**Student Level:** College Graduate  
**Topics Covered Extensively:** Appropriate Technology; Energy Storage; Passive Solar Technology

**Wind Systems**  
**Department:** Mgmt. & Business  
**Program or**  
**Curriculum:** Energy Management Sciences

**Student Level:** College Graduate  
**Topics Covered Extensively:** Wind Power, Central Systems; Wind Power, Small Systems

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**HOUSTON BAPTIST UNIVERSITY** (3576)  
 HOUSTON, Texas 77074  
 (713) 775-2661

**SOLAR RELATED COURSES**

**Natural Science**  
**Instructor:** Modinette, Jerry L.  
**Course Number:** 1414/24  
**Department:** Science  
**Credits:** 8  
**Student Level:** Freshman or Sophomore  
**Duration:** 12 Weeks, 6.0 hrs per week  
**Contact Hours:** 132  
**Classroom:** 88  
**Laboratory:** 44  
**Number of Times Taught:** 2  
**Average Enrollment:** 100

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**NORTH TEXAS ST UNIVERSITY**

DENTON, Texas 76203  
 (817) 788-2026

(3594)

**SOLAR RELATED COURSES****Energy and Our Physical Environment**

**Instructor:** Helm, Jack  
 (817) 788-2626

**Course Number:** PHYS 308  
**Department:** Arts & Sciences, Physics

**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 16 Weeks, 3.0 hrs per week  
**Contact Hours:** 48  
**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Marketing/Market Analysis; Passive Solar Technology; Photovoltaics; Solar Energy Policy Development; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Elec'l Generation, Central; Elec'l Generation, Small Scale; Space Heating; Space Cooling; Wind Power, Central Systems; Wind Power, Small Systems  
**Number of Times Taught:** 5  
**Average Enrollment:** 21

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**OUR LADY OF LAKE U**

SAN ANTONIO, Texas 78285  
 (512) 434-6711

(3598)

**SOLAR RELATED COURSES****Owner Built Solar Air Heaters**

**Instructor:** Nawrocki, David  
 (512) 822-9935

**Department:** Continuing Education  
**Student Level:** All levels  
**Duration:** 1 Weeks, 5.0 hrs per week  
**Contact Hours:** 5  
**Classroom:** 2  
**Laboratory:** 3

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**RICE UNIVERSITY**

HOUSTON, Texas 77001  
 (713) 527-8101

(3604)

**PROGRAMS AND CURRICULA****Space Solar Power Research**

**Degree:** PhD, MS,  
**Contact:** Freeman, John W.

(713) 527-8101

**Students Taking or Completing Offering:**  
 Researcher

**SOLAR RELATED COURSES****Solar Power**

Instructor: Bayazitoglu, Yildiz  
 Course Number: 531  
 Department: Mechanical Engineering, Materials Science  
 Program or Curriculum: Space Solar Power Research  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 42  
 Classroom: 42  
 Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Elec'l Generation, Small Scale; Space Heating; Space Cooling  
 Number of Times Taught: 1  
 Average Enrollment: 22

**Space Util. and Industrialization**

Instructor: Freeman, J.  
 Course Number: (713) 527-8101  
 Course Number: 488  
 Department: Space Physics  
 Program or Curriculum: Space Solar Power Research  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 12 Weeks, 3.0 hrs per week  
 Contact Hours: 36

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**SOUTHERN METH UNIVERSITY**

(3613)

DALLAS, Texas 75275  
 (214) 692-2000**SOLAR RELATED COURSES**

**Photovoltaic Solar Energy Conversion**  
 Instructor: Chu, Ting L.  
 Course Number: (214) 692-3014  
 Course Number: EE 6395  
 Department: Electrical Engineering  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Energy Conversion; Materials Research; Photovoltaics  
 Number of Times Taught: 2  
 Average Enrollment: 8

**Solar Energy Applications**

Instructor: Blum, Harold  
 Course Number: (214) 692-3498  
 Course Number: TF 4391  
 Department: Chem. Engineering

Credits: 3  
 Student Level: Junior or Senior  
 Duration: 5 Weeks, 9.0 hrs per week  
 Contact Hours: 45  
 Classroom: 39  
 Laboratory: 6  
 Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Systems Design; Domestic Hot Water; Process Heat, Agricultural; Process Heat, Industrial; Space Heating  
 Number of Times Taught: 3  
 Average Enrollment: 10

**STHWST TEX ST UNIVERSITY**

(3615)

SAN MARCOS, Texas 78666  
 (512) 245-2111**SOLAR RELATED COURSES****Physical Sciences**

Instructor: Michalk, Victor E.  
 Course Number: (512) 245-2131  
 Course Number: PHY 1314  
 Department: Physics  
 Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 16 Weeks, 4.0 hrs per week  
 Contact Hours: 64  
 Classroom: 48  
 Laboratory: 16  
 Average Enrollment: 30

**Physical Sciences**

Instructor: Michalk, Victor E.  
 Course Number: (512) 245-2131  
 Course Number: PHY 1313  
 Department: Physics  
 Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 16 Weeks, 4.0 hrs per week  
 Contact Hours: 64  
 Classroom: 48  
 Laboratory: 16  
 Average Enrollment: 30

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**TEXAS ACI UNIVERSITY**

(3639)

KINGSVILLE, Texas 78363  
 (512) 595-2111**SOLAR RELATED COURSES**

**Environmental Chemistry**  
 Instructor: Beram, J. A.  
 Course Number: 304  
 Department: Chemistry  
 Credits: 3  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 40  
 Number of Times Taught: 4  
 Average Enrollment: 15

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**TEXAS A&M U MAIN CAMPUS**  
COLLEGE STATION, Texas 77843  
(713) 845-3211

(10366)

**PROGRAMS AND CURRICULA****Graduate Program- Undergraduate Program**

Degree: PhD, MS, Mechanical Engineering

Contact: Jenkins, Peter E.  
(713) 845-1251

Students Taking or Completing Offering:  
Educator, Researcher, Solar Engineer

**SOLAR RELATED COURSES****Advanced Solar Thermal Processes**

Instructor: Jenkins, Peter E.  
(713) 845-1251

Course Number: 689

Department: Mechanical Engineering

Credits: 3

Student Level: College Graduate

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Elec'l Generation, Central; Elec'l Generation, Small Scale; Process Heat, Agricultural; Process Heat, Industrial; Space Heating; Space Cooling; Wind Power, Central Systems; Wind Power, Small Systems

Number of Times Taught: 1

Average Enrollment: 25

**Alternative Architecture**

Instructor: Zweig, Peter  
(713) 845-1015

Course Number: 645

Department: Architecture

Credits: 3

Student Level: College Graduate

Duration: 3 Weeks, 16.0 hrs per week

Contact Hours: 48

Number of Times Taught: 2

Average Enrollment: 15

**Applied Solar Energy**

Instructor: Jenkins, Peter E.  
(713) 845-1251

Course Number: ME 462

Department: Mechanical Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Topics Covered Extensively: Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar

Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Domestic Hot Water; Elec'l Generation, Small Scale; Space Heating; Space Cooling

Number of Times Taught: 3

Average Enrollment: 45

**Direct Energy Conversion**

Instructor: Jenkins, Peter E.  
(713) 845-1251

Course Number: ME 473

Department: Mechanical Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Photovoltaics; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Elec'l Generation, Central; Elec'l Generation, Small Scale; Process Heat, Industrial; Space Heating; Space Cooling; Wind Power, Central Systems; Wind Power, Small Systems

Number of Times Taught: 3

Average Enrollment: 32

**Energy Optimization Techniques**

Instructor: Degelman, Larry O.  
(713) 845-1015

Course Number: ARCH 689

Department: Architecture

Credits: 3

Student Level: College Graduate

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 40

Laboratory: 5

Topics Covered Extensively: Appropriate Technology; Energy Conservation; Intro. to Solar Energy; Solar Economics; Solar Collector Evaluation/Design; Space Heating

Number of Times Taught: 2

Average Enrollment: 8

**Environmental Control Systems**

Instructor: Trost, F. J.  
(713) 845-1017

Course Number: APCH 633

Department: Architecture

Credits: 3

Student Level: College Graduate

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 40

Laboratory: 5

Topics Covered Extensively: Energy Conservation; Heat and Energy Transfer; Intro. to Solar Energy; Solar Economics; Space Heating

Average Enrollment: 15

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TEXAS AT ARLINGTON, U OF  
ARLINGTON, Texas 76019  
(817) 273-2011

## SOLAR RELATED COURSES

*Solar and Direct Energy Conversion*  
 Instructor: Darkazalli, Ghazi  
 (817) 273-2561  
 Course Number: 6319/4391  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling  
 Number of Times Taught: 2  
 Average Enrollment: 20

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TEXAS AT AUSTIN, U OF  
AUSTIN, Texas 78712  
(512) 471-3434

## PROGRAMS AND CURRICULA

*Solar-related Courses*  
 Degree: PhD, MA, BA, Architecture related  
 Contact: Arumi-Noe, Francisco  
 (512) 471-4911  
 Students Taking or Completing Offering:  
 Architect

## SOLAR RELATED COURSES

*Applied Solar Energy*  
 Instructor: Vliet, Gary C.  
 (512) 471-7571  
 Course Number: ME 394J  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 13 Weeks, 3.0 hrs per week  
 Contact Hours: 39  
 Classroom: 33  
 Laboratory: 6  
 Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling  
 Number of Times Taught: 5  
 Average Enrollment: 20

## Appropriate Technology

Instructor: Garrison, Michael  
 (512) 471-1922  
 Course Number: A 355  
 Department: Architecture  
 Program or Curriculum: Solar-related Courses  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 6.0 hrs per week  
 Contact Hours: 90  
 Classroom: 72  
 Laboratory: 18  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Passive Solar Technology; Solar Economics; Solar Home Construction; Solar Systems Design; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 28

## Energy Reporting

Instructor: Steenhiste, Richard Van  
 (512) 471-7700  
 Course Number: J365  
 Department: Journalism  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology  
 Number of Times Taught: 1  
 Average Enrollment: 8

## Energy Simulation in Architecture

Instructor: Arumi-Noe, Francisco  
 (512) 471-4911  
 Course Number: 380M  
 Department: Architecture  
 Program or Curriculum: Solar-related Courses  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 13 Weeks, 3.0 hrs per week  
 Contact Hours: 39  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar Systems Design; Space Heating; Space Cooling  
 Average Enrollment: 10

## Env. Con. Syst.-Ener. Cons. Design

Instructor: Arumi-Noe, Francisco  
 (512) 471-4911  
 Course Number: 363  
 Department: Architecture  
 Program or Curriculum: Solar-related Courses  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 13 Weeks, 6.0 hrs per week  
 Contact Hours: 78  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology;

Energy Conservation; Energy Conversion;  
Energy Storage; Heat and Energy  
Transfer; Intro. to Solar Energy;  
Materials Research; Passive Solar  
Technology; Photovoltaics; Solar System  
Components; Solar Economics; Solar Home  
Construction; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Installation;  
Domestic Hot Water; Swimming Pool  
Heating; Elec'l Generation, Central;  
Space Heating; Space Cooling; Wind  
Power, Central Systems; Wind Power,  
Small Systems

Average Enrollment: 10

*Sol. Heat., Cool., Ener. Cons.-Bldgs.*

Instructor: Vliet, G./ Jones, J.  
(512) 471-571  
Department: Continuing, Engineering  
Education  
Student Level: All levels  
Duration: 1 Weeks, 26.0 hrs per week  
Contact Hours: 26  
Classroom: 26  
Topics Covered Extensively: Intro. to  
Solar Energy; Solar System Components;  
Solar Economics; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Domestic Hot Water; Space  
Heating; Space Cooling  
Number of Times Taught: 4  
Average Enrollment: 15

*Solar Energy*

Instructor: Amstead, R. H.  
(512) 471-1331  
Course Number: ME 378 M  
Department: ME  
Credits: 3  
Student Level: Junior or Senior  
Duration: 17 Weeks, 3.0 hrs per week  
Contact Hours: 51  
Topics Covered Extensively: Alternate  
Energy Sources; Energy Conservation;  
Intro. to Solar Energy  
Number of Times Taught: 3  
Average Enrollment: 25

*Solar Technology Assessment*

Instructor: Blissett, Marlan  
(512) 471-4962  
Course Number: PA 092 A  
Department: LBJ School of Public  
Affairs  
Credits: 8  
Student Level: College Graduate  
Duration: 32 Weeks, 4.0 hrs per week  
Contact Hours: 128  
Classroom: 100  
Laboratory: 28  
Topics Covered Extensively: Appropriate  
Technology; Energy Conservation; Intro.  
to Solar Energy; Marketing/Market  
Analysis; Passive Solar Technology;  
Solar Economics; Solar Home  
Construction; Solar Law/Legislation;  
Domestic Hot Water; Process Heat,  
Agricultural; Process Heat; Industrial;  
Space Heating

Average Enrollment: 20

*Solar Thermal Power*

Instructor: Amstead, R. H.  
(512) 471-1331  
Course Number: ME 379 M  
Department: ME  
Credits: 3  
Student Level: Junior or Senior  
Duration: 17 Weeks, 3.0 hrs per week  
Contact Hours: 51  
Topics Covered Extensively: Appropriate  
Technology; Intro. to Solar Energy;  
Elec'l Generation, Central; Elec'l  
Generation; Small Scale  
Number of Times Taught: 30  
Average Enrollment: 28

*Survey: Environmental Control Systems*

Instructor: Arumi-Noe, Francisco  
(512) 471-4911  
Course Number: 340M  
Department: Architecture  
Program or  
Curriculum: Solar-related courses  
Credits: 3  
Student Level: Junior or Senior  
Duration: 13 Weeks, 3.0 hrs per week  
Contact Hours: 39  
Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Storage;  
Heat and Energy Transfer; Intro. to  
Solar Energy; Solar Home Construction;  
Space Heating; Space Cooling  
Number of Times Taught: 8  
Average Enrollment: 25

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TEXAS AT DALLAS, U OF  
RICHARDSON, Texas 75080  
(214) 690-2111

**PROGRAMS AND CURRICULA**

*Sol. Ener. in Environ. Studs.*

Degree: PHD, MS, Environmental  
Sciences  
Contact: Moore, Joe E.  
(214) 690-2970

Students Taking or Completing Offering:  
Researcher, Solar Engineer

**SOLAR RELATED COURSES**

*Advanced Solar Energy*

Instructor: Rapp, D.  
(214) 690-2974  
Course Number: ENEG6355  
Department: NSM/ES  
Program or  
Curriculum: Sol. Ener. in Environ.  
Studs.  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45

**Topics Covered Extensively:** Energy Conversion; Energy Storage; Heat and Energy Transfer; Solar Economics; Solar Systems Design; Elec'l Generation, Central; Elec'l Generation, Small Scale; Space Heating; Space Cooling  
**Number of Times Taught:** 3  
**Average Enrollment:** 8

**Energy**

**Instructor:** Rapp, D./ Fenyves, E.  
**Course Number:** ESS5354  
**Department:** NSM/ES  
**Program or**  
**Curriculum:** Sol. Ener. in Environ. Studs.  
**Credits:** 3  
**Student Level:** College Graduate  
**Duration:** 15 Weeks, 6.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45  
**Topics, Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion  
**Number of Times Taught:** 1  
**Average Enrollment:** 30

**Energy, Consumption-Resources & Impact**

**Instructor:** Fenyves, E.  
**Course Number:** ESSC5320  
**Department:** NSM/ES  
**Program or**  
**Curriculum:** Sol. Ener. in Environ. Studs.  
**Credits:** 3  
**Student Level:** College Graduate  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45  
**Topics, Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion  
**Intro. to Solar Energy**  
**Number of Times Taught:** 5  
**Average Enrollment:** 20

**Solar Energy**

**Instructor:** Rapp, D.  
**Course Number:** (214) 690-2974  
**Department:** ENEG6347  
**Program or**  
**Curriculum:** Sol. Ener. in Environ. Studs.  
**Credits:** 3  
**Student Level:** College Graduate  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45  
**Topics, Covered Extensively:** Intro. to Solar Energy; Solar Systems Design; Domestic Hot Water; Space Heating  
**Number of Times Taught:** 4  
**Average Enrollment:** 15

**Solar Energy Laboratory**

**Instructor:** Rapp, D.  
**Course Number:** (214) 690-2970  
**Program or**

**Department:** NSM/ES  
**Program or**  
**Curriculum:** Sol. Ener. in Environ. Studs.  
**Credits:** 3  
**Student Level:** College Graduate  
**Duration:** 15 Weeks, 6.0 hrs per week  
**Contact Hours:** 90  
**Laboratory:** 90  
**Topics, Covered Extensively:** Solar System Components; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation  
**Number of Times Taught:** 1  
**Average Enrollment:** 8

**Thermodynamics and Energy Conversion**

**Instructor:** Rapp, D.  
**Course Number:** (214) 690-2970  
**Department:** ENEG6349  
**Program or**  
**Curriculum:** Sol. Ener. in Environ. Studs.  
**Credits:** 3  
**Student Level:** College Graduate  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45  
**Topics, Covered Extensively:** Energy Conservation; Energy Conversion; Heat and Energy Transfer; Solar Energy Policy Development; Solar Systems Design; Elec'l Generation, Central; Elec'l Generation, Small Scale; Space Cooling  
**Number of Times Taught:** 1  
**Average Enrollment:** 11

**TEXAS AT EL PASO, U OF**  
**EL PASO, Texas 79981**  
**(915) 747-5000**

(3661)

**PROGRAMS AND CURRICULA****Solar Energy Engineering**

**Degree:** MS, Science  
**Contact:** Whitacre, John  
**(915) 747-5809**

**Students Taking or Completing Offering:**  
**Solar Engineer,**

**SOLAR RELATED COURSES****Applications of Solar Energy**

**Instructor:** Whitacre, John  
**(915) 747-5450**  
**Course Number:** ME3456  
**Department:** Mechanical Engineering  
**Program or**

**Curriculum:** Solar Energy Engineering

**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45

Classroom: 45  
 Topics Covered Extensively: Heat and Energy Transfer; Solar System Components; Solar Systems Design; Space Heating; Space Cooling

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TEXAS CHRISTIAN U (3636)  
 FORT WORTH, Texas 76129  
 (817) 926-2461

## SOLAR RELATED COURSES

*Energy and the Future*  
 Instructor: Quarles, C. A.  
 (817) 921-7375  
 Course Number: 6413  
 Department: Physics  
 Credits: 3  
 Student Level: All levels  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Solar Economics; Solar Collector Evaluation/Design  
 Number of Times Taught: 2  
 Average Enrollment: 40

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TEXAS TECH UNIVERSITY (3644)  
 LUBBOCK, Texas 79409  
 (806) 742-2011

## PROGRAMS AND CURRICULA

*Interdisciplinary Engineering*  
 Degree: PhD, Philosophy-Inter. Engin.  
 Contact: Gully, A. J.  
 (806) 742-3456

Students Taking or Completing Offering:  
 Researcher, Solar Engineer

## SOLAR RELATED COURSES

*Energy and Housing*  
 Instructor: Kiesling, E. W.  
 (806) 742-3472  
 Department: Cat., Ener. Res. and Coll. of Engin.  
 Program or Curriculum: Interdisciplinary Engineering  
 Student Level: College Graduate  
 Duration: 1 Weeks, 32.0 hrs per week  
 Contact Hours: 32  
 Classroom: 32  
 Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design; Domestic Hot Water; Space Heating

\* \* \* \* \*

*Engin...Aspects-Res., Process., Util.*  
 Instructor: Parker, Harry W.  
 (806) 742-3553  
 Course Number: CH.E. 4333  
 Department: Chemical Engineering  
 Program or Curriculum: Interdisciplinary Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion  
 Number of Times Taught: 4  
 Average Enrollment: 12

*Housing and Energy as Consumer Issues*  
 Instructor: McKown, Cora  
 (806) 742-3153  
 Course Number: 518  
 Department: Home Eco., Fam Mgmt., Hous. Cons. Sci.  
 Program or Curriculum: Interdisciplinary Engineering  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 1 Weeks, 45.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Energy Conservation; Marketing/Market Analysis  
 Number of Times Taught: 1  
 Average Enrollment: 25

*Interdisc. Apprs.Res., Energ. Ed.*  
 Instructor: McKown, Cora  
 (806) 742-3153  
 Course Number: 1518  
 Department: Home Eco., Fam. Mgmt., Hous. Cons. Sci.  
 Program or Curriculum: Interdisciplinary Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 13 Weeks, 15.0 hrs per week  
 Contact Hours: 45  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Intro. to Solar Energy; Marketing/Market Analysis; Solar System Components; Solar Economics; Solar Home Construction; Solar Law/Legislation; Solar Systems Design; Solar Systems Installation

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Texas

Solar Energy Research Institute

TRINITY UNIVERSITY

SAN ANTONIO, Texas 78284  
(512) 736-7011

(3667)

PROGRAMS AND CURRICULA

Solar Energy Graduate Prog.

Degree: MS, Sci.-Appld. Sol. Ener. or  
Sol. Ener. Stud.

Contact: Clark, Eugene  
(512) 736-7504

Students Taking or Completing Offering:  
Researcher, Solar Engineer, Solar  
Technician

SOLAR RELATED COURSES

Economic Analysis of Energy and Capital Projects

Instructor: Dorner, Fred H.  
(512) 736-7238

Course Number: BSN 390

Department: Business Administration

Program or Curriculum: Solar Energy Graduate  
Prog.

Credits: 3

Student Level: College Graduate

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Alternate  
Energy Sources; Solar Economics; Elec'l  
Generation, Central; Space Cooling

Number of Times Taught: 1

Average Enrollment: 18

Heat Transfer and Thermodynamics

Instructor: Andrews, Robert  
(512) 736-7512

Course Number: ENGR 3695

Department: Engineering Science

Program or Curriculum: Solar Energy Graduate  
Prog.

Credits: 3

Student Level: College Graduate

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Energy  
Conversion; Heat and Energy Transfer

Number of Times Taught: 3

Average Enrollment: 18

Intro. to Solar Energy Applications

Instructor: Clark, Eugene  
(512) 736-7504

Course Number: PHY 1194

Department: Physics

Program or Curriculum: Solar Energy Graduate  
Prog.

Credits: 1

Student Level: College Graduate

Duration: 15 Weeks, 1.0 hrs per week

Contact Hours: 15

Classroom: 15

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Storage;

Intro. to Solar Energy: Passive Solar  
Technology; Solar System Components;  
Solar Economics; Solar Collector  
Evaluation/Design; Domestic Hot Water;  
Space Heating  
Number of Times Taught: 3  
Average Enrollment: 15

Modeling and Computer Analysis

Instructor: Treat, C. H.  
(512) 736-7512

Course Number: EMGR 3835

Department: Engineering Science

Program or Curriculum: Solar Energy Graduate  
Prog.

Credits: 3

Student Level: College Graduate

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Elec'l  
Generation, Central; Elec'l Generation,  
Small Scale; Process Heat, Industrial;  
Space Cooling

Number of Times Taught: 2

Average Enrollment: 15

Photovoltaics

Instructor: Loxsom, Fred  
(512) 736-7421

Course Number: PHYS 358G

Department: Physics

Program or Curriculum: Solar Energy Graduate  
Prog.

Credits: 3

Student Level: College Graduate

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Energy  
Conversion; Photovoltaics; Solar  
Systems-Design; Elec'l Generation,  
Small Scale

Number of Times Taught: 1

Average Enrollment: 10

Physics of Solar Collectors

Instructor: Clark, Eugene  
(512) 736-7504

Course Number: PHYS 356

Department: Physics

Program or Curriculum: Solar Energy Graduate  
Prog.

Credits: 3

Student Level: College Graduate

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Heat and Energy Transfer; Intro. to  
Solar Energy; Passive Solar Technology;  
Solar System Components; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Domestic Hot Water;  
Swimming Pool Heating; Elec'l  
Generation, Central; Elec'l Generation,

**1978-79 National Solar Energy Education Directory**

Texas

**Small-Scale Process Heat**

Agricultural; Process Heat; Industrial;  
Space Heating; Space Cooling  
Number of Times Taught: 2  
Average Enrollment: 15

**Solar and Atmospheric Radiation**

Instructor: Clark, Eugene  
(512) 736-7504  
Course Number: PHYS 387  
Department: Physics  
Program or Curriculum: Solar Energy Graduate  
Prog.  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45

Topics Covered Extensively: Alternate  
Energy Sources; Intro. to Solar Energy;  
Solar Energy Policy Development; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Domestic Hot Water;  
Swimming Pool Heating; Elec'l  
Generation; Central; Elec'l Generation,  
Small Scale; Process Heat,  
Agricultural; Process Heat, Industrial;  
Space Heating; Space Cooling  
Number of Times Taught: 3  
Average Enrollment: 15

**Solar Energy System Components**

Instructor: Treat, C. H.  
(512) 736-7512  
Course Number: ENGR 362G  
Department: Engineering  
Program or Curriculum: Solar Energy Graduate  
Prog.  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45

Topics Covered Extensively: Heat and  
Energy Transfer; Marketing/Market  
Analysis; Materials Research; Solar  
System Components; Solar Collector  
Evaluation/Design; Solar Systems  
Design; Solar Systems Testing and  
Evaluation; Domestic Hot Water;  
Swimming Pool Heating; Elec'l  
Generation; Central; Elec'l Generation,  
Small Scale; Process Heat,  
Agricultural; Process Heat, Industrial;  
Space Heating; Space Cooling  
Number of Times Taught: 2  
Average Enrollment: 10

**Solar Energy System Design**

Instructor: Treat, C. H.  
(512) 736-7512  
Course Number: ENGR 395S  
Department: Engineering Science  
Program or Curriculum: Solar Energy Graduate  
Prog.  
Credits: 3  
Student Level: College Graduate

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Solar System  
Components; Solar Economics; Solar  
Collector Evaluation/Design; Solar  
Systems Design; Solar Systems  
Installation; Solar Systems Testing and  
Evaluation; Domestic Hot Water;  
Swimming Pool Heating; Elec'l  
Generation; Central; Elec'l Generation,  
Small Scale; Process Heat,  
Agricultural; Process Heat, Industrial;  
Space Heating; Space Cooling  
Number of Times Taught: 2  
Average Enrollment: 15

**U OF HOUSTON CEN CAMPUS**

HOUSTON, Texas 77004 (3652)  
(713) 749-2214

**SOLAR RELATED COURSES**

**Man, Architecture and Energy**

Instructor: Way, George E.  
(713) 749-1188

Course Number: 430T

Department: Architecture

Credits: 3

Student Level: Junior or Senior

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Classroom: 42

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Intro. to Solar  
Energy; Passive Solar Technology; Solar  
System Components; Solar Economics;  
Solar Home Construction; Space Heating;  
Space Cooling

Number of Times Taught: 3

Average Enrollment: 15

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**WEST TEXAS ST UNIVERSITY**

CANYON, Texas 79016 (3665)  
(806) 656-0111

**SOLAR RELATED COURSES**

**Solar Energy: Res. and Rural Systems**

Instructor: Nelson, Vaughn

(806) 656-3904

Course Number: 39901-1

Department: Physics

Credits: 3

Student Level: All levels

Duration: 17 Weeks, 3.0 hrs per week

Contact Hours: 54

Classroom: 51

Topics Covered Extensively: Alternate  
Energy Sources; Appropriate Technology;  
Energy Conservation; Energy Conversion;  
Energy Storage; Intro. to Solar Energy;  
Domestic Hot Water; Space Heating; Wind

**Power, Small Systems****Wind Energy and Wind Turbines**

Instructor: Nelson, Vaughn  
(806) 656-3904

Course Number: 39902-1

Department: Physics

Credits: 3

Student Level: All levels

Duration: 17 Weeks, 3.0 hrs per week

Contact Hours: 54

Classroom: 51

Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Solar Systems Design; Wind Power, Small Systems

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**Community/Junior Colleges**

**CENTRAL TEXAS COLLEGE** (4003)  
KILLEEN, Texas 76541  
(817) 526-1211

**PROGRAMS AND CURRICULA****Solar Energy Systems Specialist**

Degree: Certificate of Completion  
Contact: Tresler, Clarence  
(817) 526-1236

Students Taking or Completing Offering:  
Installer-Residential (Solar System),  
Installer-Commercial (Solar System),  
Solar Technician, Trade Specialty

**Solar Energy Systems Technology**

Degree: AD, Applied Science  
Contact: Tresler, Clarence  
(817) 526-1236

Students Taking or Completing Offering:  
Installer-Residential (Solar System),  
Installer-Commercial (Solar System),  
Solar Technician, Trade Specialty

**SOLAR RELATED COURSES****Principles of Solar Energy**

Instructor: Tresler, Clarence  
(817) 526-1236  
Course Number: SESY 1314  
Department: Industrial Technology  
Program or Curriculum: Solar Energy Systems Technology/ Solar Energy Systems Specialist  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Intro. to

**Solar Energy**

Number of Times Taught: 2  
Average Enrollment: 25

**Solar Cooling Systems**

Instructor: Tresler, Clarence  
(817) 526-1236

Course Number: SESY 241

Department: Industrial Technology

Program or Curriculum: Solar Energy Systems Technology

Credits: 4

Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 6.0 hrs per week

Contact Hours: 96

Classroom: 48

Laboratory: 48

Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Plumbing Techniques; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation

**Solar Energy Special Projects**

Instructor: Tresler, Clarence  
(817) 523-1236

Course Number: SESY 231

Department: Industrial Technology

Program or Curriculum: Solar Energy Systems Technology

Credits: 3

Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 6.0 hrs per week

Contact Hours: 96

Classroom: 16

Laboratory: 80

Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Plumbing Techniques; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

**Solar Heating Systems**

Instructor: Tresler, Clarence  
(817) 526-1236

Course Number: SESY 141

Department: Industrial Technology

Program or Curriculum: Solar Energy Systems Technology/ Solar Energy Systems Specialist

Credits: 4

Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 6.0 hrs per week

Contact Hours: 96

Classroom: 48

Laboratory: 48

**Topics Covered Extensively:** Energy Storage; Heat and Energy Transfer; Plumbing Techniques; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating  
**Number of Times Taught:** 2  
**Average Enrollment:** 25

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**GRAYSON CO JUNIOR COLLEGE** (3570)  
 DENISON, Texas 75020  
 (214) 465-6030

**SOLAR RELATED COURSES****Energy Resources**

**Instructor:** Roberts, John H.  
 (214) 456-6030  
**Course Number:** SCI 134  
**Department:** Engineering/Science  
**Credits:** 3  
**Student Level:** Freshman or Sophomore  
**Duration:** 16 Weeks, 3.0 hrs per week  
**Contact Hours:** 48  
**Classroom:** 48  
**Topics Covered Extensively:** Alternate Energy Sources; Energy Conversion; Intro. to Solar Energy  
**Number of Times Taught:** 1  
**Average Enrollment:** 15

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**LEE COLLEGE** (3583)  
 BAYTOWN, Texas 77520  
 (713) 427-5611

**SOLAR RELATED COURSES****Environmental Science**

**Instructor:** Lehmburg, Verne  
 (713) 427-5691  
**Course Number:** BIO 413  
**Department:** Science  
**Credits:** 4  
**Student Level:** Freshman or Sophomore  
**Duration:** 15 Weeks, 6.0 hrs per week  
**Contact Hours:** 90  
**Classroom:** 45  
**Laboratory:** 45  
**Topics Covered Extensively:** Alternate Energy Sources; Biomass Conversion; Energy Conservation; Energy Conversion; Solar Collector Evaluation/Design

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**NAVARRO COLLEGE** (3593)  
 CORSICANA, Texas 75110  
 (214) 874-6501

**PROGRAMS AND CURRICULA**

**Solar Energy Installers/Mechanics**  
**Degree:** OTHER, Solar Energy  
**Program:** Installers, Mechanics  
**Contact:** Kasprzyk, Ernest  
 (214) 874-6501  
**Students Taking or Completing Offering:**  
 Installer-Residential (Solar System);  
 Installer-Commercial (Solar System)

**Solar Engineering Technology**

**Degree:** AD, Appl. Sci.-Sol. Engin. Tech.  
**Contact:** Myers, Arthur  
 (214) 874-6501  
**Students Taking or Completing Offering:**  
 Solar Technician

**SOLAR RELATED COURSES**

**Collector and Energy Storage**  
**Instructor:** Myers, Arthur  
 (214) 874-6501

**Program or Curriculum:** Solar Engineering Technology  
**Credits:** 4  
**Student Level:** Freshman or Sophomore  
**Duration:** 16 Weeks, 6.0 hrs per week  
**Contact Hours:** 96  
**Classroom:** 32  
**Laboratory:** 64

**Topics Covered Extensively:** Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Materials Research; Passive Solar Technology; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Swimming Pool Heating; Space Heating; Space Cooling

**Collectors, Ener. Syst., Inst. and Serv.**  
**Instructor:** Norman, Albion  
 (214) 874-6501  
**Course Number:** SE1044

**Program or Curriculum:** Solar Energy Installers/ Mechanics  
**Credits:** 4  
**Student Level:** Freshman or Sophomore  
**Duration:** 16 Weeks, 6.0 hrs per week  
**Contact Hours:** 96  
**Classroom:** 32  
**Laboratory:** 64

**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Plumbing Techniques; Sheet Metal

**Techntquest: Solar System Components;**  
**Solar Collector Evaluation/Design;**  
**Solar Systems Design; Solar Systems**  
**Installation; Solar Systems**  
**Maintenance; Solar Systems Testing and**  
**Evaluation; Domestic Hot Water; Space**  
**Heating; Space Cooling.**

**Economics, Codes, Legal, Consumerism**

**Instructor:** Myers, Arthur  
**Department:** (214) 874-6501

**Program or Curriculum:** Solar Energy

**Credits:** 2

**Student Level:** Freshman or Sophomore  
**Duration:** 16 Weeks, 2.0 hrs per week

**Contact Hours:** 32  
**Classroom:** 32

**Topics Covered Extensively:** Alternate  
 Energy Sources; Appropriate Technology;  
 Marketing/Market Analysis; Solar  
 Economics; Solar Home Construction;  
 Solar Law/Legislation; Solar Collector  
 Evaluation/Design; Solar Systems  
 Testing and Evaluation; Domestic Hot  
 Water; Swimming Pool Heating; Space  
 Heating; Space Cooling

**Energy Science I**

**Instructor:** Myers, Arthur  
**Department:** (214) 874-6501

**Program or Curriculum:** Solar Energy  
 Technology

**Credits:** 4

**Student Level:** Freshman or Sophomore  
**Duration:** 16 Weeks, 6.0 hrs per week

**Contact Hours:** 96  
**Classroom:** 48

**Laboratory:** 48

**Topics Covered Extensively:** Alternate  
 Energy Sources; Appropriate Technology;  
 Energy Conservation; Energy Conversion;  
 Energy Storage; Heat and Energy  
 Transfer; Intro. to Solar Energy;  
 Plumbing Techniques; Sheet Metal  
 Techniques; Solar System Components;  
 Solar Systems Design; Solar Systems  
 Installation; Solar Systems  
 Maintenance; Domestic Hot Water; Space  
 Heating; Space Cooling

**Energy Science II**

**Instructor:** Myers, Arthur  
**Department:** (214) 874-6501

**Program or Curriculum:** Solar Energy  
 Technology

**Credits:** 4

**Student Level:** Freshman or Sophomore  
**Duration:** 16 Weeks, 6.0 hrs per week

**Contact Hours:** 96  
**Classroom:** 48

**Laboratory:** 48

**Topics Covered Extensively:** Alternate  
 Energy Sources; Appropriate Technology;

**Energy Conservation; Energy Conversion;**  
**Energy Storage; Heat and Energy**  
**Transfer; Intro. to Solar Energy;**  
**Plumbing Techniques; Sheet Metal**  
**Techniques; Solar System Components;**  
**Solar Systems Design; Solar Systems**  
**Installation; Solar Systems**  
**Maintenance; Domestic Hot Water; Space**  
**Heating; Space Cooling**

**Intro. to Solar Heating and Cooling**

**Instructor:** Norman, Albian  
**Department:** (214) 874-6501

**Course Number:** SE1013  
**Department:** Occupational Education

**Program or Curriculum:** Solar Energy  
 Installers/ Mechanics

**Credits:** 3

**Student Level:** Freshman or Sephomore  
**Duration:** 16 Weeks, 3.0 hrs per week  
**Contact Hours:** 48

**Classroom:** 48

**Topics Covered Extensively:** Alternate  
 Energy Sources; Appropriate Technology;  
 Energy Conservation; Heat and Energy  
 Transfer; Intro. to Solar Energy;  
 Passive Solar Technology; Plumbing  
 Techniques; Solar System Components;  
 Solar Home Construction; Solar Systems  
 Design; Domestic Hot Water; Elec'l  
 Generation, Small Scale; Space Heating;  
 Space Cooling

**Number of Times Taught:** 1

**Average Enrollment:** 23

**Materials and Fabrication**

**Instructor:** Vaughn, Ralph  
**Department:** (214) 874-6501

**Course Number:** SE1034  
**Department:** Occupational Education

**Program or Curriculum:** Solar Energy  
 Installers/ Mechanics

**Credits:** 4

**Student Level:** Freshman or Sophomore  
**Duration:** 16 Weeks, 6.0 hrs per week  
**Contact Hours:** 96

**Classroom:** 32

**Laboratory:** 64

**Topics Covered Extensively:** Energy  
 Storage; Heat and Energy Transfer;  
 Materials Research; Plumbing  
 Techniques; Sheet Metal Techniques;  
 Solar System Components; Solar Home  
 Construction; Solar Systems Design;  
 Solar Systems Installation; Solar  
 Systems Maintenance; Solar Systems  
 Testing and Evaluation; Domestic Hot  
 Water; Space Heating; Space Cooling

**Materials and Material Handling**

**Instructor:** Myers, Arthur  
**Department:** (214) 874-6501

**Program or Curriculum:** Solar Engineering  
 Technology

**Credits:** 3

**Student Level:** Freshman or Sophomore  
**Duration:** 16 Weeks, 5.0 hrs per week

Contact Hours: 80

Classroom: 16

Laboratory: 64

**Topics Covered Extensively:** Materials Research; Plumbing Techniques; Sheet Metal Techniques; Domestic Hot Water; Space Heating; Space Cooling

**Non-residential Appl. and Future Tech.**

Instructor: Myers, Arthur  
(214) 874-6501

Department: Solar Energy

Program or Curriculum: Solar Engineering Technology

Credits: 3

Student Level: Freshman or Sophomore

Duration: 16 Weeks, 5.0 hrs per week

Contact Hours: 80

Classroom: 32

Laboratory: 48

**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Swimming Pool Heating; Elec'l Generation, Central; Elec'l Generation, Small Scale; Process Heat, Agricultural; Process Heat, Industrial; Space Heating; Space Cooling

**Operational Diagnosis**

Instructor: Myers, Arthur  
(214) 874-6501

Department: Solar Energy

Program or Curriculum: Solar Engineering Technology

Credits: 3

Student Level: Freshman or Sophomore

Duration: 16 Weeks, 5.0 hrs per week

Contact Hours: 80

Classroom: 32

Laboratory: 48

**Topics Covered Extensively:** Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation

**Sizing Design and Retrofit**

Instructor: Myers, Arthur  
(214) 874-6501

Department: Solar Energy

Program or Curriculum: Solar Engineering Technology

Credits: 4

Student Level: Freshman or Sophomore

Duration: 16 Weeks, 6.0 hrs per week

Contact Hours: 96

Classroom: 48

Laboratory: 48

**Topics Covered Extensively:** Solar Home Construction; Solar Systems Design;

**Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling**

**Solar Heating and Cooling Systems**

Instructor: Myers, Arthur  
(214) 874-6501

Course Number: SE1064

Department: Occupational Education

Program or Curriculum: Solar Energy Installers/ Mechanics

Credits: 4

Student Level: Freshmen or Sophomore

Duration: 16 Weeks, 6.0 hrs per week

Contact Hours: 96

Classroom: 32

Laboratory: 64

**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Passive Solar Technology; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Process Heat, Agricultural; Process Heat, Industrial; Space Heating; Space Cooling

Average Enrollment: 15

**Solar Practicum**

Instructor: Myers, Arthur  
(214) 874-6501

Department: Solar Energy

Program or Curriculum: Solar Engineering Technology

Credits: 3

Student Level: Freshman or Sophomore

Duration: 16 Weeks, 3.0 hrs per week

Contact Hours: 48

Laboratory: 48

**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Intro. to Solar Energy; Materials Research; Plumbing Techniques; Sheet Metal Techniques; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling

**Technical Surveys of Energy Sources**

Instructor: Myers, Arthur  
(214) 874-6501

Department: Solar Energy

Program or Curriculum: Solar Engineering Technology

Credits: 3

Student Level: Freshman or Sophomore

Duration: 16 Weeks, 3.0 hrs per week

Contact Hours: 48

Classroom: 48

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Domestic Hot Water; Swimming Pool Heating; Elec'l Generation, Central; Elec'l Generation, Small Scale; Process Heat, Agricultural; Process Heat, Industrial; Space Heating; Space Cooling; Wind Power, Central Systems; Wind Power, Small Systems

NORTH LAKES COLLEGE  
IRVING, Texas 75062  
(214) 255-5229

(29066)

## PROGRAMS AND CURRICULA

Solar Energy Technician

Degree: A.O.; Solar Technology  
Contact: Knowles, Jim  
(214) 255-5325

Students Taking or Completing Offering:  
Solar Technician

## SOLAR RELATED COURSES

Energy Science I

Instructor: Knowles, Jim  
(214) 255-5260  
Department: Science/Math/Technology  
Program or  
Curriculum: Solar Energy Technician  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 6.0 hrs per week  
Contact Hours: 96  
Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer

Future Technology

Instructor: Knowles, Jim  
(214) 255-5260  
Department: Science/Math/Technology  
Program or  
Curriculum: Solar Energy Technician  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Domestic Hot Water; Swimming Pool Heating; Elec'l Generation, Central; Elec'l Generation, Small Scale; Process Heat, Agricultural; Process Heat, Industrial; Space Cooling

Introduction to Solar

Instructor: Knowles, Jim  
(214) 255-5260  
Department: Science/Math/Technology

## Program or

Curriculum: Solar Energy Technician  
Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 2.0 hrs per week  
Contact Hours: 32  
Classroom: 32  
Topics Covered Extensively: Energy Conservation; Passive Solar Technology

## Materials/Material Handling

Instructor: Knowles, Jim  
(214) 255-5260  
Department: Science/Math/Technology  
Program or  
Curriculum: Solar Energy Technician  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 5.0 hrs per week  
Contact Hours: 80  
Classroom: 16  
Laboratory: 64  
Topics Covered Extensively: Plumbing Techniques; Sheet Metal Techniques

## Operational Diagnosis

Instructor: Knowles, Jim  
(214) 255-5260  
Department: Science/Math/Technology  
Program or  
Curriculum: Solar Energy Technician  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 4.0 hrs per week  
Contact Hours: 64  
Classroom: 32  
Laboratory: 32  
Topics Covered Extensively: Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation

## Sizing Design and Retrofit

Instructor: Knowles, Jim  
(214) 255-5260  
Department: Science/Math/Technology  
Program or  
Curriculum: Solar Energy Technician  
Credits: 5  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 7.0 hrs per week  
Contact Hours: 112  
Classroom: 48  
Laboratory: 64  
Topics Covered Extensively: Solar Systems Design; Solar Systems Installation

## Solar Codes and Consumerism

Instructor: Knowles, J.  
(214) 255-5260  
Department: Science/Math/Technology  
Program or  
Curriculum: Solar Energy Technician  
Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 2.0 hrs per week  
Contact Hours: 32  
Classroom: 32

**Topics Covered Extensively:**

Marketing/Market Analysis; Solar Energy  
Policy Development; Solar Economics;  
Solar Law/Legislation

**Solar Practicum**

Instructors: Knowles, Jim  
(214) 255-5260  
Department: Science/Math/Technology  
Program or Curriculum: Solar Energy Technician  
Credits: 5  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 5.0 hrs per week  
Contact Hours: 80

**Technical Survey of Energy Sources**

Instructors: Knoples, J.  
(214) 255-5260  
Department: Science/Math/Technology  
Program or Curriculum: Solar Energy Technician  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks  
Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conservation; Energy Conversion; Wind Power; Central Systems

**ODESSA COLLEGE**

(3596)

ODESSA, Texas 79760  
(915) 337-5381

**PROGRAMS AND CURRICULA**

**Solar Power**  
Contact: Witcher, Norman  
(915) 337-5381

Students Taking or Completing Offering:  
Solar Technician

**SOLAR RELATED COURSES**

**Solar Power**  
Instructors: Witcher, Norman  
(915) 337-5381  
Course Number: R/AC 2300  
Department: Refrigeration & Air Conditioning  
Program or Curriculum: Solar Power  
Credits: 6  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 10.0 hrs per week  
Contact Hours: 160  
Classroom: 48  
Laboratory: 112  
Topics Covered Extensively: Appropriate Technology; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 38

**RANGER JUNIOR COLLEGE**

(3603)

RANGER, Texas 76470  
(817) 647-3234

**PROGRAMS AND CURRICULA**

**A/C and Refrig. - Sol. Ener. Option**

Degree: AD, Applied Science  
Contact: Stiles, Alton  
(817) 647-3234

Students Taking or Completing Offering:  
Solar Technician

**SOLAR RELATED COURSES**

**Air Cond. and Ref. VII**

Course Number: AR 281  
Department: Air Cond. & Ref.  
Program or Curriculum: A/C and Refrig. - Sol. Ener. Option  
Credits: 6  
Student Level: Freshman or Sophomore  
Topics Covered Extensively: Heat and Energy Transfer; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Space Heating; Space Cooling

**Fundamentals of Solar Heat and Cool.**

Course Number: AR 263  
Department: Air Cond. & Refrig.  
Program or Curriculum: A/C and Refrig. - Sol. Ener. Option  
Credits: 6  
Student Level: Freshman or Sophomore  
Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Space Cooling

**Solar Thermal Energy Systems**

Instructors: Stiles, Alton  
(817) 647-3234  
Course Number: AR 264  
Department: Air Conditioning/Refrigeration  
Program or Curriculum: A/C and Refrig. - Sol. Ener. Option  
Credits: 6  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 10.0 hrs per week  
Contact Hours: 160  
Classroom: 48  
Laboratory: 112  
Topics Covered Extensively: Plumbing Techniques; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems

**Texas****Solar Energy Research Institute****Installation; Solar Systems**

Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Elec'l Generation, Small Scale; Space Heating; Space Cooling

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**TYLER JUNIOR COLLEGE**

TYLER, Texas 75701  
(214) 597-4281

**PROGRAMS AND CURRICULA****Air Conditioning & Refrig. Tech.**

Degree: AD, Applied Science  
Contact: Minter, Richard T.  
(214) 593-4401

**Students Taking or Completing Offering:**  
Trade Specialty

**SOLAR RELATED COURSES****Introduction to Solar Systems**

Instructor: Robinson, Carol T.  
(214) 592-8619  
Course Number: AC 1135  
Department: Technology  
Program or Curriculum: Air Conditioning & Refrig. Tech.  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Intro. to Solar Energy  
Average Enrollment: 31

**Solar Systems Installation**

Instructor: Robinson, Carol T.  
(214) 592-8619  
Course Number: AC 2235  
Department: Technology  
Program or Curriculum: Air Conditioning & Refrig. Tech.  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 6.0 hrs per week  
Contact Hours: 96  
Classroom: 32  
Laboratory: 64  
Topics Covered Extensively: Solar System Components; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
Average Enrollment: 18

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**Vocational/Technical Colleges**

**TEXAS TECH RIO GRANDE** (9225)  
HARLINGEN, Texas 78550  
(512) 425-4922

**SOLAR RELATED COURSES****Solar Receivers**

Instructor: Vogel, Harold  
(512) 425-4922  
Course Number: ACT214  
Department: Air Cond. and Refrigeration Tech.  
Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 12 Weeks, 2.0 hrs per week  
Contact Hours: 24  
Classroom: 12  
Laboratory: 12  
Topics Covered Extensively: Energy Conversion; Energy Storage; Plumbing Techniques; Solar System Components; Solar Systems Installation; Domestic Hot Water; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 18

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**TEXAS STATE TECHNICAL INSTITUTE**

Sweetwater, Texas 79556 (90480)

**SOLAR RELATED COURSES****\*Training Course**

Department: Continuing Education  
Contact Hours: 48  
Topics Covered Extensively: Solar System Components; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Space Heating

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**Other Educational Institutions**

**TRI-COLLEGE CONTINUING EDUCATION/VOCATIONAL TECHNICAL TRAINING** (90130)  
Abilene, Texas 79604

**SOLAR RELATED COURSES****Solar Energy**

Instructor: Hodgeson, John  
(915) 698-3096  
Department: Continuing Education  
Student Level: All levels  
Duration: 7 Weeks, 2.0 hrs per week  
Contact Hours: 14  
Classroom: 14  
Topics Covered Extensively: Energy

**1978-79 National Solar Energy Education Directory**

Texas

**Conservation; Intro. to Solar Energy;**

**Passive Solar Technology; Solar System Components; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Space Heating**

**Number of Times Taught: 1**

**Average Enrollment: 11**

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**Utah****Solar Energy Research Institute****Colleges/Universities**

**UTAH STATE UNIVERSITY** (3677)  
 LOGAN, Utah 84322  
 (801) 752-4100

**SOLAR RELATED COURSES****Biometeorology Instruments**

Instructor: Dirmhirn  
 (801) 752-4100  
 Course Number: 652  
 Department: Agri/Soil Sci. and Biometeorology  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 12 Weeks, 3.0 hrs per week  
 Contact Hours: 36  
 Classroom: 9  
 Laboratory: 27  
 Topics Covered Extensively: Appropriate Technology; Heat and Energy Transfer; Intro. to Solar Energy; Photovoltaics  
 Number of Times Taught: 5  
 Average Enrollment: 9

**Biometeorology**

Instructor: Dirmhirn/ Hanks/  
 Wooldridge  
 (801) 752-4100  
 Course Number: 709  
 Department: Agri./Soil Sci. and Biometeorology  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 12 Weeks, 3.0 hrs per week  
 Contact Hours: 36  
 Classroom: 36  
 Topics Covered Extensively: Appropriate Technology; Heat and Energy Transfer; Intro. to Solar Energy; Photovoltaics  
 Number of Times Taught: 5  
 Average Enrollment: 10

**Environmental Remote Sensing**

Instructor: Dirmhirn, I./ Baker, K.  
 (801) 725-7100  
 Course Number: 707  
 Department: Soil Sci & Biomet.  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 12 Weeks, 3.0 hrs per week  
 Contact Hours: 36  
 Classroom: 36  
 Topics Covered Extensively: Appropriate Technology; Heat and Energy Transfer; Intro. to Solar Energy; Photovoltaics  
 Number of Times Taught: 4  
 Average Enrollment: 8

**Environmental Field Experiments**

Instructor: Dirmhirn  
 (801) 752-4100  
 Course Number: 693  
 Department: Agri/Soil Sci. and Biometeo  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 12 Weeks, 3.0 hrs per week

**Contact Hours: 36**

Classroom: 9

Laboratory: 27

Topics Covered Extensively: Appropriate Technology; Heat and Energy Transfer; Intro. to Solar Energy; Photovoltaics  
 Number of Times Taught: 4  
 Average Enrollment: 9

**Instrumentation Lab**

Instructor: Dirmhirn  
 (801) 752-4100  
 Course Number: 752  
 Department: Agri/Soil Sci. and Biometeo.  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 12 Weeks, 3.0 hrs per week  
 Contact Hours: 36  
 Classroom: 9  
 Laboratory: 27  
 Topics Covered Extensively: Appropriate Technology; Heat and Energy Transfer; Intro. to Solar Energy; Photovoltaics  
 Number of Times Taught: 4  
 Average Enrollment: 8

**Solar Energy Systems**

Instructor: Phillips, W.F.  
 (801) 752-4100  
 Course Number: ME546  
 Department: Mech. Engrg.  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Classroom: 30  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design  
 Number of Times Taught: 12  
 Average Enrollment: 12

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**UTAH, UNIVERSITY OF** (3675)  
 SALT LAKE CITY, Utah 84112  
 (801) 581-7211

**SOLAR RELATED COURSES****Energy Conversion**

Instructor: Daghm, R. F.  
 (801) 581-6441  
 Course Number: ME 561  
 Department: Engin., Mech. and Indus. Engineering  
 Credits: 4  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 4.0 hrs per week  
 Contact Hours: 40  
 Classroom: 40  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conversion  
 Number of Times Taught: 10  
 Average Enrollment: 35

1978-79 National Solar Energy Education Directory

Utah

Solar Building Design

Instructor: Boehm, R. F.  
(801) 581-6441  
Department: Engin., Mech. and Indus. Engineering  
Student Level: College Graduate  
Duration: 1 Weeks, 10.0 hrs per week  
Contact Hours: 10  
Classroom: 10  
Topics Covered Extensively: Energy Conservation; Energy Storage; Passive Solar Technology; Solar Systems Design; Space Heating

Thermal Applications of Solar Energy

Instructor: Boehm, R. F.  
(801) 581-6441  
Course Number: ME 563  
Department: Engin., Mech. and Indus. Engineering  
Credits: 4  
Student Level: Junior or Senior  
Duration: 9 Weeks, 4.0 hrs per week  
Contact Hours: 36  
Classroom: 36  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Solar Collector Evaluation/Design  
Number of Times Taught: 1  
Average Enrollment: 25

Thermal Systems Design

Instructor: Boehm, R. F.  
(801) 581-6441  
Course Number: ME 562  
Department: Engin., Mech. and Indus. Engineering  
Credits: 4  
Student Level: Junior or Senior  
Duration: 9 Weeks, 4.0 hrs per week  
Contact Hours: 36  
Classroom: 36  
Number of Times Taught: 6  
Average Enrollment: 21

WEIER STATE COLLEGE

Ogden, Utah 84408  
(801) 399-5941

(3680)

SOLAR RELATED COURSES

\*Solar Energy & Bldss.  
Instructor: Capener, Robert  
Department: Physic Dept.

Community/Junior Colleges

DIXIE COLLEGE

SAINT GEORGE, Utah 84770  
(801) 673-4011

(3671)

PROGRAMS AND CURRICULA

Solar Technology  
Degree: Certificate of Completion  
Contact: Hacking, John  
(801) 673-4811

SOLAR RELATED COURSES

Intro. to Applied Solar Energy

Instructor: Tait, Don  
(801) 673-4811  
Course Number: ST 150  
Department: Engineering Tech.  
Program or Curriculum: Solar Technology  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 11 Weeks, 5.0 hrs per week  
Contact Hours: 55  
Classroom: 55  
Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Marketing/Market Analysis; Materials Research; Passive Solar Technology; Plumbing Techniques; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling  
Number of Times Taught: 12  
Average Enrollment: 20

Solar Energy-Home Use Appls.

Instructor: Tait, Don  
(801) 673-4811  
Course Number: ST 123  
Department: Engineering Tech.  
Program or Curriculum: Solar Technology  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 11 Weeks, 3.0 hrs per week  
Contact Hours: 33  
Classroom: 16  
Laboratory: 15

Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Plumbing Techniques; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling  
Number of Times Taught: 9  
Average Enrollment: 18

**Vocational/Technical Colleges**

**UTAH TECH COLLEGE SALT LK** (5220)  
SALT LAKE CITY, Utah 84107  
(801) 299-3411

**SOLAR RELATED COURSES****Alternate Energy**

Instructor: Ingram, William W.  
(801) 969-3411  
Course Number: ADT 057E  
Department: Architect  
Student Level: All levels  
Duration: 10 Weeks, 5.0 hrs per week  
Contact Hours: 50  
Classroom: 20  
Laboratory: 20  
Topics Covered Extensively: Energy  
Conservation; Intro. to Solar Energy;  
Res. & Ind. Solar Technology; Process Heat,  
Agricultural; Process Heat, Industrial  
Number of Times Taught: 2  
Average Enrollment: 22

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Colleges/Universities**GODDARD COLLEGE**PLAINFIELD, Vermont  
(802) 454-8311

(3686)

**PROGRAMS AND CURRICULA****\*Social Ecology**

Contact: Brookchin, Murray

**SOLAR RELATED COURSES****\*Dwelling Solar Processes**

Instructor: Park, J.W. Troia, G.

Program or

Curriculum: \*Social Ecology

Duration: 11 Weeks, 6.0 hrs per week

Contact Hours: 66

Topics Covered Extensively: Energy  
Conversion; Heat and Energy Transfer;  
Intro. to Solar Energy; Solar Collector;  
Evaluation/Design; Solar Systems  
Design; Space Heating**\*Energy Efficient Shelter**

Instructor: Langdon, Bill

Program or

Curriculum: \*Social Ecology

Duration: 11 Weeks, 2.0 hrs per week

Contact Hours: 22

Topics Covered Extensively: Solar  
Collector Evaluation/Design; Solar  
Systems Design**\*Shelter Workshop**Instructor: Langdon, B./ Higgins,  
A.

Program or

Curriculum: \*Solar Ecology

Duration: 11 Weeks, 4.0 hrs per week

Contact Hours: 44

Topics Covered Extensively: Solar Home  
Construction**\*Solar Workshop**

Instructor: Troia, Gene

Program or

Curriculum: \*Social Ecology

Duration: 10 Weeks, 2.0 hrs per week

Contact Hours: 22

Topics Covered Extensively: Solar  
Collector Evaluation/Design; Solar  
Systems Design; Solar Systems Testing  
and Evaluation**MARLBORO COLLEGE**MARLBORO, Vermont  
(802) 254-2393

(3690)

**PROGRAMS AND CURRICULA****Solar Energy Program**Degree: BS, Environmental Science  
Contact: Hayes, John W.  
(802) 254-2393**SOLAR RELATED COURSES****Solar Energy & Building Design**Instructor: Hayes, John W.  
(802) 254-2393

Department: Science

Program or

Curriculum: Solar Energy Program

Credits: 3

Student Level: Freshman or Sophomore

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Classroom: 42

Topics Covered Extensively: Energy  
Conservation; Energy Storage; Heat and  
Energy Transfer; Intro. to Solar  
Energy; Passive Solar Technology; Solar  
Economics; Solar Systems Design;  
Domestic Hot Water; Space Heating

Number of Times Taught: 1

Average Enrollment: 25

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**MIDDLEBURY COLLEGE**

MIDDLEBURY, Vermont

(802) 388-4948

(3691)

**PROGRAMS AND CURRICULA****Senior Work in Solar Energy**Degree: BA, Physics, Environmental  
Studies, PhysicsContact: Wolfson, Richard  
(802) 388-7956Students Taking or Completing Offering:  
Educator, Researcher

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**SAINT MICHAEL'S COLLEGE**

WINOSKI, Vermont

(802) 655-2000

(3694)

**SOLAR RELATED COURSES****The Energy Crisis**Instructor: Casavant, Dominique P.  
(802) 655-2000

Course Number: 131

Department: Physics

Credits: 3

Student Level: Freshman or Sophomore

Duration: 12 Weeks, 3.0 hrs per week

Contact Hours: 36

Classroom: 36

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**Community/Junior College**

VERMONT, CMTY COLLEGE OF  
MONTPELIER, Vermont  
(802) 828-2481

SOLAR RELATED COURSES

*Alternative Energy*

- Student Level: All levels
- Duration: 3 Weeks, 12.0 hrs per week
- Contact Hours: 36
- Topics Covered Extensively: Alternate Energy Sources; Intro. to Solar Energy; Passive Solar Technology
- Number of Times Taught: 3
- Average Enrollment: 10

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1978-79 National Solar Energy Education Directory

Virginia

**Colleges/Universities**

**FERRUM COLLEGE**

FERRUM, Virginia 24088  
(703) 365-2121

**PROGRAMS AND CURRICULA**

*Energy Technology*

Degree: BS,  
Contact: Bier, James/ Talbert, Roy  
(703) 365-2121

Students Taking or Completing Offering:  
Solar Technician

**SOLAR RELATED COURSES**

*Energy*

Instructor: Bier, James  
(703) 365-2121

Course Number: 414

Department: Environmental studies

Program or Curriculum: Energy Technology

Credits: 4

Student Level: Junior or Senior

Duration: 15 Weeks, 5.0 hrs per week

Contact Hours:

Classroom: 45

Laboratory: 30

Topics Covered Extensively: Energy Conservation; Space Heating

Number of Times Taught: 1

Average Enrollment: 20

**LYNCHBURG COLLEGE**

LYNCHBURG, Virginia 24501  
(804) 845-9071

**SOLAR RELATED COURSES**

*Solar Energy*

Instructor: Sigler, J.A.  
(804) 845-9171

Course Number: 538

Department: Physics

Credits: 3

Student Level: College Graduate

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours:

Classroom: 45

Topics Covered Extensively: Appropriate Technology; Energy Storage; Heat and Energy Transfer; Intro. to Solar

Energy; Materials Research;

Photovoltaics; Solar System Components; Solar Collector Evaluation/Design;

Elec'l Generation, Central; Elec'l

Generation, Small Scale; Space Heating

Number of Times Taught: 1

Average Enrollment: 10

**OLD DOMINION UNIVERSITY**

NORFOLK, Virginia 23508  
(804) 489-6000

(3728)

**PROGRAMS AND CURRICULA**

*Power/Energy Conversion Option*

Degree: PhD, MS, BS, Mechanical Engineering

Contact: Goglia, G. L.  
(804) 489-6485

Students Taking or Completing Offering:  
Researcher, Solar Engineer, Other

*Solar Energy Systems*

Degree: BS, OT,  
Contact: Crossman, Gary R.  
(804) 489-6574

**SOLAR RELATED COURSES**

*Air Conditioning Systems*

Instructor: Ferrari, R.E.  
(804) 489-6574

Course Number: MET 470  
Department: Engineering/Mechan.

Program or Curriculum: Engr. Tech.

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours:

Classroom: 45

Topics Covered Extensively: Heat and Energy Transfer; Space Heating; Space Cooling

Number of Times Taught: 20

Average Enrollment: 20

*Energy Conversion*

Instructor: Kovner, E.A.  
(804) 489-6574

Course Number: MET 480  
Department: Engineering/Mechan.

Program or Curriculum: Engr. Tech.

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours:

Classroom: 45

Topics Covered Extensively: Energy Conversion; Heat and Energy Transfer; Photovoltaics; Elec'l Generation, Small Scale

Number of Times Taught: 6

Average Enrollment: 20

*Energy Conversion*

Instructor: Roberts, A. S.  
(804) 489-6485

Course Number: ENME4/513  
Department: Mechanical Engineering and Mechanics

Program or Curriculum: Power/ Energy

Conversion Option  
Credits: 3

**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 30  
**Laboratory:** 0  
**Topics Covered Extensively:** Alternate Energy Sources; Energy Conversion; Photovoltaics; Elec'l Generation, Small Scale  
**Number of Times Taught:** 8  
**Average Enrollment:** 12

**Energy Systems**  
**Instructor:** Deal, Walter F.  
 (804) 489-6461

**Course Number:** 3043  
**Department:** Vocational and Industrial Arts Education

**Program or Curriculum:** Power/ Energy Conversion Option

**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 6.0 hrs per week  
**Contact Hours:** 90  
**Classroom:** 45  
**Laboratory:** 45  
**Topics Covered Extensively:** Energy Conversion; Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Testing and Evaluation; Domestic Hot Water  
**Number of Times Taught:** 4  
**Average Enrollment:** 15

**Environmental Controls**  
**Instructor:** Roberts, A.S.  
 (804) 489-6485

**Course Number:** ENME4/512  
**Department:** Mechanical Engineering and Mechanics

**Program or Curriculum:** Power/ Energy Conversion Option

**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 38  
**Classroom:** 28  
**Topics Covered Extensively:** Energy Conservation; Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy  
**Number of Times Taught:** 10  
**Average Enrollment:** 10

**Power and Energy Laboratory**  
**Instructor:** Crossman, G.R.  
 (804) 489-6574

**Course Number:** MET 465/485  
**Department:** Engineering/Mechan. Engr. Tech.

**Program or Curriculum:** Solar Energy Systems

**Credits:** 2  
**Student Level:** All levels  
**Duration:** 30 Weeks, 3.0 hrs per week  
**Contact Hours:** 90  
**Laboratory:** 90

**Topics Covered Extensively:** Energy Conversion; Heat and Energy Transfer  
**Number of Times Taught:** 20  
**Average Enrollment:** 15

#### Refrigeration Systems

**Instructor:** Kovner, E.A.  
 (804) 489-6574

**Course Number:** MET 460  
**Department:** Engineering/Mechan. Engr. Tech.

**Program or Curriculum:** Solar Energy Systems

**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45  
**Topics Covered Extensively:** Heat and Energy Transfer; Space Cooling  
**Number of Times Taught:** 20  
**Average Enrollment:** 20

#### Solar Energy Systems 490

**Instructor:** Crossman, G.R.  
 (804) 498-6574

**Course Number:** MET 490  
**Department:** Engineering/Mechan. Engr. Tech.

**Program or Curriculum:** Solar Energy Systems

**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45

**Topics Covered Extensively:** Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Domestic Hot Water

#### Solar Power Engineering

**Instructor:** Roberts, A. Sidney  
 (804) 489-6485

**Course Number:** ENME 4/516  
**Department:** Mechanical Engineering and Mechanics

**Program or Curriculum:** Power/ Energy Conversion Option

**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 15 Weeks, 3.0 hrs per week  
**Contact Hours:** 45  
**Classroom:** 45

**Topics Covered Extensively:** Energy Conversion; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating

**Number of Times Taught:** 3  
**Average Enrollment:** 15

1978-79 National Solar Energy Education Directory

Virginia

**Thermal Power Systems**

Instructor: Kovner, E.A.  
 Course Number: MET 450  
 Department: Engineering/Mechan.  
 Program or Curriculum: Solar Energy Systems  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Heat and Energy Transfer  
 Number of Times Taught: 10  
 Average Enrollment: 20

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VA POLY INST AND STATE U  
 BLACKSBURG, Virginia 24061  
 (703) 951-6000

(3754)

**SOLAR RELATED COURSES**

**Building Systems Technology**  
 Instructor: Schubert, B.P.  
 Course Number: (703) 961-5512  
 Department: Architecture and Urban Studies  
 Credits: 9  
 Student Level: College Graduate  
 Duration: 27 Weeks, 3.0 hrs per week  
 Contact Hours: 81  
 Classroom: 54  
 Laboratory: 27  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 40

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VIRGINIA COMMONWEALTH U  
 RICHMOND, Virginia 23284  
 (804) 770-6472

(3735)

**SOLAR RELATED COURSES**

**General Energy Education Workshop**  
 Instructor: Honnold, J. A./ Nelson, L. D.  
 Course Number: (804) 257-1028  
 Department: EDU 651  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 2 Weeks, 22.0 hrs per week  
 Contact Hours: 44  
 Classroom: 44  
 Topics Covered Extensively: Alternate

**Energy Sources**

Number of Times Taught: 1  
 Average Enrollment: 43

**Natural Resources and Society**

Instructor: Honnold, J. A./ Nelson, L. D.  
 Course Number: SOC 355  
 Department: Sociology and Anthropology  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 45  
 Topics Covered Extensively: Alternate Energy Sources  
 Number of Times Taught: 1  
 Average Enrollment: 10

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VIRGINIA MAIN CAMPUS, U OF

CHARLOTTESVILLE, Virginia 22903  
 (804) 924-0311

(6968)

**SOLAR RELATED COURSES**

**Solar Energy - The Ultimate Resource**  
 Instructor: Lilleleht, L.U.  
 Course Number: (804) 924-7778  
 Department: ENGR 120  
 Credits: 2  
 Student Level: Freshman or Sophomore  
 Duration: 7 Weeks, 6.0 hrs per week  
 Contact Hours: 42  
 Classroom: 7  
 Laboratory: 35  
 Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Systems Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 35

**Solar Energy Conversion and Appl.**

Instructor: Iachetta, F. A.  
 Course Number: (804) 924-7421  
 Department: ME 520  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 42  
 Classroom: 42  
 Topics Covered Extensively: Solar Collector Evaluation/Design; Solar Systems Design  
 Number of Times Taught: 2  
 Average Enrollment: 23

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**VIRGINIA MILITARY INST**  
LEXINGTON, Virginia 24450  
(703) 463-6311

(3753)

**SOLAR RELATED COURSES***Advanced Thermodynamics*

Instructor: Tranel, R.S.  
(703) 463-6308  
Course Number: ME 408  
Department: Mechanical Engineering  
Credits: 3  
Student Level: Junior or Senior  
Duration: 14 Weeks, 4.0 hrs per week  
Contact Hours: 56  
Classroom: 28  
Laboratory: 28  
Number of Times Taught: 1  
Average Enrollment: 13

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**Community/Junior Colleges**

**BLUE RIDGE CHTY COLLEGE**  
WEYERS CAVE, Virginia 24486  
(703) 234-2461

(6819)

**SOLAR RELATED COURSES***Introduction to Solar Technology*

Instructor: Chandler, Rupert P.  
(703) 234-2461  
Course Number: ENVR 154  
Department: Engineering & Technologies  
Credits: 3  
Student Level: All levels  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Topics Covered Extensively: Intro. to Solar Energy  
Number of Times Taught: 3  
Average Enrollment: 25

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**DANVILLE CHTY COLLEGE**  
DANVILLE, Virginia 24541  
(804) 797-3553

(3758)

**SOLAR RELATED COURSES***A Survey of Alternate Energy*

Instructor: Solomon, Michael  
(703) 797-3553  
Course Number: PH103  
Department: Physics  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 12 Weeks, 3.0 hrs per week  
Contact Hours: 36

Classroom: 25

Laboratory: 11

Topics Covered Extensively: Alternate Energy Sources; Passive Solar Technology; Photovoltaics

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**LORD FAIRFAX CHTY COLLEGE**  
MIDDLETON, Virginia 22645  
(703) 869-1120

(8659)

**SOLAR RELATED COURSES***Alternative Home Systems*

Instructor: Nesbitt, Patti  
Course Number: ENV 156  
Credits: 3  
Student level: Freshman or Sophomore  
Duration: 11 Weeks, 3.0 hrs per week  
Contact Hours: 33  
Classroom: 33

*Buying Solar*

Instructor: Lillis, J. W.  
(703) 869-1120  
Department: Continuing Education  
Student Level: High School Graduate  
Duration: 1 Weeks, 6.0 hrs per week  
Contact Hours: 6  
Classroom: 6  
Number of Times Taught: 1  
Average Enrollment: 20

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**NORTHERN VA CHTY COLLEGE**  
ANNANDALE, Virginia 22003  
(703) 323-3000

(3727)

**SOLAR RELATED COURSES***Solar Seminar & Project*

Instructor: Nasseri, Kurosh H.  
(202) 692-7591  
Course Number: 198  
Department: Environmental & Natural Science  
Credits: 3  
Student Level: All levels  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Classroom: 30  
Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Plumbing Techniques; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Space Cooling  
Number of Times Taught: 1  
Average Enrollment: 17

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**SOUTHSIDE VA CHTY COLLEGE** (8661)  
**ALBERTA, Virginia 23821**  
**(804) 949-7111**

**PROGRAMS AND CURRICULA**

**Air Cond., Heat, & Refrig.**  
Degree: A, C Heat, & Refrig.  
Contact: Varyhan, C.G.  
(804) 949-7111  
**Students Taking or Completing Offering:**  
Contractor, Installer-Residential  
(Solar System), Installer-Commercial  
(Solar System)

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**THOMAS NELSH CHTY COLLEGE** (6871)  
**HAMPTON, Virginia 23670**  
**(804) 826-4800**

**SOLAR RELATED COURSES**

**Solar Energy**  
Instructor: Pegg, Robert  
(804) 827-3694  
Department: Continuing Education  
Student Level: All levels  
Duration: 3 Weeks, 10½ hrs per week  
Contact Hours: 30  
Classroom: 30  
Topics Covered Extensively: Appropriate Technology; Energy Storage; Intro. to Solar Energy; Solar System Components; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance  
Number of Times Taught: 4  
Average Enrollment: 15

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**VA WESTERN CHTY COLLEGE** (3760)  
**ROANOKE, Virginia 24015**  
**(703) 344-2031**

**SOLAR RELATED COURSES**

**Solar Energy Systems Design**  
Instructor: Arminio, Robert  
(703) 982-7365  
Course Number: APCG167  
Department: Arch. Technology  
Credits: 3  
Student Level: All levels  
Duration: 10 Weeks, 3.0 hrs per week  
Contact Hours: 30  
Topics Covered Extensively: Solar Systems Design

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**Colleges/Universities**

**WASHINGTON ST UNIVERSITY** (3800)  
 FULLMAN, Washington 99163  
 (509) 335-3564

**SOLAR RELATED COURSES****Thermal Systems**

Instructor: Plumb, O. A./ Englund;  
 J. S.  
 (509) 335-3226

Course Number: ME 435  
 Department: Mechanical Engineering  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48

Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Design

Number of Times Taught: 1  
 Average Enrollment: 35

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**WASHINGTON, UNIVERSITY OF** (3798)  
 SEATTLE, Washington 98195  
 (206) 543-2100

**PROGRAMS AND CURRICULA****Energy Engineering**

Degree: FHD, MS, Science in Engineering  
 Contact: Decher, R.  
 (206) 543-6057

Students Taking or Completing Offering:  
 Researchers; Solar Engineer

**SOLAR RELATED COURSES****Architectural Studies Options**

Instructor: Heerwagen/ Varey  
 (205) 543-4100

Course Number: 503X3/4/5  
 Department: Architecture  
 Credits: 6  
 Student Level: College Graduate  
 Duration: 9 Weeks, 12.0 hrs per week  
 Contact Hours: 100  
 Laboratory: 100

Number of Times Taught: 1  
 Average Enrollment: 11

**Des. and Use of Mech. Systems in Bldgs.**

Instructor: Heerwagen, Dean R.  
 (206) 543-2132

Course Number: 535  
 Department: Architecture  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 40  
 Classroom: 40

Number of Times Taught: 3  
 Average Enrollment: 30

**Ener. Cons. Opp. for Bldg. Design and Use**

Instructor: Heerwagen, Dean R.  
 (206) 543-2132  
 530  
 Department: Architecture  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Classroom: 30

Number of Times Taught: 3  
 Average Enrollment:

**Ener. Cons.-Sol. Ener. Appls. in Bldgs.**

Instructor: LaVigne, A. B.  
 (206) 543-6005  
 498  
 Department: Architecture and Urban Planning  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 9 Weeks, 4.4 hrs per week  
 Contact Hours: 40  
 Classroom: 40

Topics Covered Extensively: Energy Conservation; Energy Storage; Heat and Energy Transfer; Passive Solar Technology; Domestic Hot Water; Space Heating

Number of Times Taught: 2  
 Average Enrollment: 20

**Ener. in Various Design Studio**

Instructor: Miller, Marietta  
 (206) 543-4736  
 Course Number: 502/498  
 Department: Architecture  
 Credits: 6  
 Student Level: Junior or Senior  
 Duration: 11 Weeks, 12.0 hrs per week  
 Contact Hours: 132  
 Classroom: 132

Topics Covered Extensively: Appropriate Energy Conservation; Energy Storage

**Studies in the Science of the Built Environment**

Instructor: Miller, Marietta S.  
 (206) 543-4736  
 Course Number: 531/532  
 Department: Architecture  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 50  
 Classroom: 40

Topics Covered Extensively: Energy Conservation

**The Promise of Solar Energy**

Instructor: Hyman, Barry  
 (206) 543-9038  
 Course Number: 531/532  
 Department: Prog. in Social Management of Tech.  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30

**Topics Covered Extensively:** Energy Storage; Intro. to Solar Energy; Marketing/Market Analysis; Passive Solar Technology; Solar Energy Policy Development; Solar Economics; Solar Law/Legislation  
**Number of Times Taught:** 5  
**Average Enrollment:** 20

**Thermal Performance of Buildings**  
**Instructor:** Heerwagen, Dean R.  
 (206) 543-2132  
**Course Number:** 431  
**Department:** Architecture  
**Credits:** 3  
**Student Level:** Junior or Senior  
**Duration:** 10 Weeks, 4.0 hrs per week  
**Contact Hours:** 40  
**Classroom:** 40  
**Number of Times Taught:** 1  
**Average Enrollment:** 45

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**Community/Junior Colleges**

FORT STEILACCOM CC  
 TACOMA, Washington 98498  
 (206) 552-3948

(5000)

**SOLAR RELATED COURSES**

**Environmental Science**  
**Instructor:** Harding, Karen  
 (206) 964-6674  
**Course Number:** 100  
**Department:** Physical Science  
**Credits:** 5  
**Student Level:** Freshman or Sophomore  
**Duration:** 10 Weeks, 5.0 hrs per week  
**Contact Hours:** 50  
**Classroom:** 50  
**Number of Times Taught:** 1  
**Average Enrollment:** 25

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NORTH SEATTLE CC  
 SEATTLE, Washington 98103  
 (206) 634-4444

(9784)

**PROGRAMS AND CURRICULA**

**Heating-Solar Energy**  
**Contact:** Swenson, Don  
 (206) 634-4419  
**Students Taking or Completing Offering:**  
 Sheet Metal Worker

**SOLAR RELATED COURSES**

**Heating-Solar Energy**  
**Instructor:** Swenson, Don  
 (206) 634-4419  
**Department:** Engineering Technology  
**Program:**  
**Curriculum:** Heating-Solar Energy  
**Student Level:** High School Graduate  
**Duration:** 6 Weeks, 15.0 hrs per week  
**Contact Hours:** 90  
**Classroom:** 45  
**Laboratory:** 45  
**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Installation; Domestic Hot Water; Space Heating

**Solar Energy**  
**Instructor:** Stepnich, Ivan  
 (206) 634-4423  
**Course Number:** ECT 207  
**Department:** Engineering Related Technologies  
**Program:**  
**Curriculum:** Heating-Solar Energy  
**Credits:** 3  
**Student Level:** Freshman or Sophomore  
**Duration:** 11 Weeks, 3.0 hrs per week  
**Contact Hours:** 33  
**Classroom:** 33  
**Topics Covered Extensively:** Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Plumbing Techniques; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Elec'l Generation, Central; Process Heat, Industrial; Space Heating  
**Number of Times Taught:** 1  
**Average Enrollment:** 25

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**PENINSULA COLLEGE**

(3786)

FORT ANGELES, Washington 98362  
 (206) 452-9277

**SOLAR RELATED COURSES**

**Residential Solar Heating Systems**  
**Instructor:** VanDeusen, George  
 (206) 452-9277  
**Course Number:** T.E.275  
**Department:** Engineering Technology  
**Credits:** 3  
**Student Level:** All levels  
**Duration:** 10 Weeks, 3.0 hrs per week  
**Contact Hours:** 30

Classroom: 30  
 Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Home Construction; Solar Systems Design; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 40  
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**SPOKANE FLS CHTY COLLEGE** (9544)  
 SPOKANE, Washington 99204  
 (509) 456-2810

#### SOLAR RELATED COURSES

*How To Bld. Your Own Sol. H/H Heater*  
 Instructor: Roscher, Ted  
 (509) 456-2840  
 Department: Evening(Adult  
 Continuing Edu.)  
 Student Level: All levels  
 Duration: 10 Weeks, 3.0 hrs per week  
 Contact Hours: 30  
 Classroom: 10  
 Laboratory: 20  
 Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Materials Research; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water  
 Number of Times Taught: 1  
 Average Enrollment: 13  
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**TACOMA COMMUNITY COLLEGE** (3796)  
 TACOMA, Washington 98465  
 (206) 756-5100

#### SOLAR RELATED COURSES

*Energy: Past-Present-Future*  
 Course Number: ENGR. 120  
 Department: Engineering  
 Credits: 2  
 Student Level: Freshman or Sophomore  
 Duration: 10 Weeks, 2.0 hrs per week  
 Contact Hours: 20  
 Classroom: 20  
 Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology  
 Number of Times Taught: 2  
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#### Vocational/Technical Colleges

**OLYMPIA TECH CHTY COLLEGE** (5372)  
 OLYMPIA, Washington 98502  
 (206) 753-3000

#### SOLAR RELATED COURSES

*Solar Energy for Space Heating and Hot Water*  
 Instructor: Oatman, Martin  
 (206) 753-3005  
 Course Number: CONS 198  
 Department: Continuing Education  
 Student Level: College Graduate  
 Duration: 11 Weeks, 3.0 hrs per week  
 Contact Hours: 33  
 Classroom: 33  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water  
 Number of Times Taught: 1  
 Average Enrollment: 20  
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West Virginia

**Colleges/Universities**

**WEST VIRGINIA UNIVERSITY** (3827)  
MORGANTOWN, West Virginia 26506  
(304) 293-0111

**SOLAR RELATED COURSES**

*Aerospace Problems*

Instructor: Toth, John  
(304) 293-5339  
Course Number: AE280  
Department: Engineering Aerospace  
Credits: 3  
Student Level: All levels  
Duration: 16 Weeks, 4.0 hrs per week  
Contact Hours: 64  
Classroom: 48  
Laboratory: 16  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Testing and Evaluation  
Number of Times Taught: 4  
Average Enrollment: 15

*Appropriate Technology Seminar*

Instructor: Devore, Paul W.  
(304) 293-3803  
Course Number: 390  
Department: Technology Education  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Intro. to Solar Energy; Passive Solar Technology  
Number of Times Taught: 2  
Average Enrollment: 15

*Energy and Society*

Instructor: Depue, David  
(304) 293-3803  
Course Number: 200  
Department: Technology Education  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Topics Covered Extensively: Alternate Energy Sources; Biomass Conversion; Energy Conservation; Energy Conversion; Passive Solar Technology  
Number of Times Taught: 1  
Average Enrollment: 12

*Production Systems - Technical*

Instructor: Fytlick, Edward  
(304) 293-3803  
Course Number: 321  
Department: Technology Education  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 4.0 hrs per week

Contact Hours: 60

Classroom: 60

Topics Covered Extensively: Energy Conversion; Energy Storage; Marketing/Market Analysis; Materials Research; Passive Solar Technology

Number of Times Taught: 10

Average Enrollment: 10

*Technology - History and Development*

Instructor: Pytlick, Edward  
(304) 293-3803  
Course Number: 400  
Department: Technology Education  
Credits: 3  
Student Level: College Graduate  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Classroom: 45  
Number of Times Taught: 12  
Average Enrollment: 12

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**Community/Junior Colleges**

**PARKERSBURG CITY COLLEGE** (3828),  
PARKERSBURG, West Virginia 26101  
(304) 424-8000

**SOLAR RELATED COURSES**

*Spec. Top. in Air Cond/Refrig: Solar Heat*

Instructor: Schmidt, Larry  
(304) 424-8256  
Course Number: ACR 299  
Department: Air Cond./Refr. Technology  
Credits: 4  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 6.0 hrs per week  
Contact Hours: 90  
Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 13

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POTOMAC STATE COLLEGE  
KEYSER, West Virginia 26726  
(304) 788-3011

(3829)

## SOLAR RELATED COURSES

## Engineering Design II

Instructor: Mor, Gordon  
Course Number: II  
Department: Engineering  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 15 Weeks, 6.0 hrs per week  
Contact Hours: 90  
Classroom: 45  
Laboratory: 45  
Topics Covered Extensively: Alternate  
Energy Sources; Energy Conversion;  
Energy Storage; Intro. to Solar Energy;  
Solar Home Construction; Solar  
Collector Evaluation/Design  
Number of Times Taught: 2  
Average Enrollment: 45

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**Colleges/Universities**

**LAWRENCE UNIVERSITY**  
APPLETON, Wisconsin 54911  
(414) 739-3681

(3856)

**SOLAR RELATED COURSES***Energy and the Environment*

Instructor: Joel Peteranne  
(414) 739-3681

Course Number: CHEM 9

Department: Chemistry

Credits: 3

Student Level: All levels

Duration: 10 Weeks, 3.5 hrs per week

Contact Hours: 35

Classroom: 35

Number of Times Taught: 6

Average Enrollment: 22

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**MARQUETTE UNIVERSITY**  
1515 W. Wisconsin Ave.  
MILWAUKEE, Wisconsin 53233  
(414) 224-7700

(3863)

**PROGRAMS AND CURRICULA***Energy Engineering*

Degree: AD, Engineering  
Contact: Jaskovski, S.V.  
(414) 224-6820

Students Taking or Completing Offering:  
Solar Engineer

**SOLAR RELATED COURSES***Solar Energy, Engineering, I*

Instructor: Jaskovski, S.V.  
(414) 224-6820

Course Number: 128

Department: Elect. Eng.

Program or

Curriculum: Energy Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 11 Weeks, 3.0 hrs per week

Contact Hours: 42

Classroom: 42

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Elec'l Generation, Central; Elec'l Generation, Small Scale; Process Heat, Agricultural; Process Heat, Industrial; Space Heating; Space Cooling; Wind Power, Central Systems; Wind Power, Small Systems

Number of Times Taught: 4

Average Enrollment: 22

*Solar Energy Engineering, II*

Instructor: Jaskovski, S.V.  
(414) 224-6820

Course Number: 129

Department: Elect. Eng.

Program or

Curriculum: Energy Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 14 Weeks, 3.0 hrs per week

Contact Hours: 42

Classroom: 42

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Elec'l Generation, Central; Elec'l Generation, Small Scale; Process Heat, Agricultural; Process Heat, Industrial; Space Heating; Space Cooling; Wind Power, Central Systems; Wind Power, Small Systems

Number of Times Taught: 4

Average Enrollment: 22

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**MILWAUKEE SCH ENGINEERING**

MILWAUKEE, Wisconsin 53201

(414) 272-8720

**SOLAR RELATED COURSES***Solar Energy*

Instructor: Mallmann, A. James  
(414) 272-8720

Course Number: FH-320

Department: Physics

Credits: 3

Student Level: Junior or Senior

Duration: 11 Weeks, 3.0 hrs per week

Contact Hours: 33

Classroom: 33

Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating; Wind Power, Small Systems

Number of Times Taught: 4

Average Enrollment: 20

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Wisconsin

Solar Energy Research Institute

NICOLET COLLEGE- TECH INST  
RHINELANDER, Wisconsin 54501  
(715) 369-4410

(8919)

SOLAR RELATED COURSES

*Consumer Awareness-Solar Energy*

Instructor: Horstketter, John J.  
(715) 369-4424  
Course Number: 421-2144  
Department: Tech. Ed. Division  
Student Level: All levels  
Duration: 10 Weeks, 2.5 hrs per week  
Contact Hours: 25  
Classroom: 25

Topics Covered Extensively: Appropriate Technology; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating

Number of Times Taught: 1  
Average Enrollment: 35

Components: Solar Economics; Solar Collector Evaluation/Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 3  
Average Enrollment: 70

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WISCONSIN GREEN BAY, U OF  
GREEN BAY, Wisconsin 54302  
(414) 465-2121 (3899)

SOLAR RELATED COURSES

*Introduction to Solar Energy*

Instructor: Norman, Jack  
(414) 465-2276  
Course Number: 862/483X  
Department: Science & Environmental Change  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 8 Weeks, 5.2 hrs per week  
Contact Hours: 42

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Photovoltaics; Solar Energy Policy Development; Solar System Components; Solar Systems Design; Domestic Hot Water; Space Heating; Wind Power, Small Systems

Number of Times Taught: 1  
Average Enrollment: 5

*Solar and Alternate Energy Systems*

Instructor: Mehra, Anjani/ Lanz, Robert  
(414) 465-2371  
Course Number: 862/415  
Department: Interdis. - Sci. and Envirn. Change  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 42

Topics Covered Extensively: Alternate Energy Sources; Photovoltaics; Solar Collector Evaluation/Design; Solar System Design; Domestic Hot Water; Space Heating

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WISCONSIN EAU CLAIRE, U OF  
EAU CLAIRE, Wisconsin 54701  
(715) 836-0123

(3917)

SOLAR RELATED COURSES

*Solar Energy*

Instructor: Janke, Robert  
(715) 836-3718  
Course Number: 336  
Department: Geography  
Credits: 3  
Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48

Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System

WISCONSIN LA CROSSE, U OF  
LA CROSSE, Wisconsin 54601  
(608) 785-8000 (3919)

SOLAR RELATED COURSES

*Energy Problems-Solar Options*

Instructor: Egbert, G. V. Gystrom, O.  
(608) 785-8431  
Department: University Outreach  
Physics

Student Level: All levels  
Duration: 1 Weeks, 24.0 hrs per week  
Topics Covered Extensively: Alternate Energy Sources; Heat and Energy Transfer; Intro. to Solar Energy  
Number of Times Taught: 3  
Average Enrollment: 40

**Introduction to Solar Energy**

Instructor: Esbert, G./ Fystrom, D.  
(608) 785-8431  
Course Number: 105  
Department: Arts, Letters & Science  
Physics  
Credits: 2  
Student Level: All levels  
Duration: 16 Weeks, 2.0 hrs per week  
Contact Hours: 32  
Classroom: 26  
Laboratory: 6  
Topics Covered Extensively: Alternate Energy Sources; Heat and Energy Transfer; Intro. to Solar Energy  
Number of Times Taught: 1  
Average Enrollment: 17

**WISCONSIN MADISON, U OF**  
MADISON, Wisconsin 53706  
(608) 262-1234

**PROGRAMS AND CURRICULA****Solar Energy Research Program**

Degree: PhD, MS, Mech. Eng., Chem. Eng.  
Contact: Duffie, J.A.  
(608) 263-1587

Students Taking or Completing Offering:  
Researcher, Solar Engineer

**SOLAR RELATED COURSES****Solar Energy Technology**

Instructor: Duffie, J. A.  
(608) 263-1587  
Course Number: ME/CHE 567  
Department: Engineering  
Program or Curriculum: Solar Energy Research Program  
Student Level: Junior or Senior  
Duration: 16 Weeks, 2.0 hrs per week  
Contact Hours: 32  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design  
Number of Times Taught: 10  
Average Enrollment: 40

**Solar Radiation and Wind Energy**

Instructor: Stearns, Charles R.  
(608) 262-0780  
Course Number: 330  
Department: Land's Meteorology  
Credits: 3

Student Level: Junior or Senior  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 48  
Topics Covered Extensively: Alternate Energy Sources; Heat and Energy Transfer; Intro. to Solar Energy; Wind Power, Small Systems  
Number of Times Taught: 2  
Average Enrollment: 21

**WISCONSIN MILWAUKEE, U OF**  
MILWAUKEE, Wisconsin 53201  
(414) 963-4444

**PROGRAMS AND CURRICULA****Solar Architecture**

Degree: Architecture  
Contact: Cataneese, Anthony James  
(414) 963-4016  
Students Taking or Completing Offering:  
Architect

**SOLAR RELATED COURSES****Energy Conscious Design**

Instructor: Dent, S./ Ollwang, J./ Schade, J.  
(414) 963-5650

Course Number: 470/770  
Department: Architecture and Urban Planning  
Program or Curriculum: Solar Architecture  
Credits: 9  
Student Level: Junior or Senior  
Duration: 16 Weeks, 16.0 hrs per week  
Contact Hours: 256  
Classroom: 52  
Laboratory: 204  
Topics Covered Extensively: Energy Conservation; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Systems Design; Space Heating; Space Cooling  
Number of Times Taught: 6  
Average Enrollment: 10

**Energy Design Fundamentals**

Instructor: Shada, John  
(414) 963-4014

Course Number: ARCH 497  
Department: Architecture  
Program or Curriculum: Solar Architecture  
Credits: 3  
Student Level: Junior or Senior  
Duration: 15 Weeks, 3.0 hrs per week  
Contact Hours: 45  
Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar Economics; Solar Home Construction; Solar Systems Design; Domestic Hot Water; Space Heating

Number of Times Taught: 3  
 Average Enrollment: 30

**Energy Design Fundamentals II**

Instructor: Dent, Stephen D.  
 (414) 963-5650.  
 Course Number: 497  
 Department: Architecture and Urban Planning  
 Program or Curriculum: Solar Architecture  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 18

**Opt. in Energy Conscious Design**

Instructor: Schade, John  
 (414) 963-4014  
 Course Number: ARCA70/770  
 Department: Architecture  
 Program or Curriculum: Solar Architecture  
 Credits: 9  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 9.0 hrs per week  
 Contact Hours: 135  
 Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Energy Storage; Intro. to Solar Energy; Passive Solar Technology; Solar Economics; Solar Home Construction; Solar Systems Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 3  
 Average Enrollment: 30

**Solar Dwelling Design**

Instructor: Dent, Stephen D.  
 (414) 963-5650.  
 Course Number: 497  
 Department: Architecture and Urban Planning  
 Program or Curriculum: Solar Architecture  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 4 Weeks, 10.0 hrs per week  
 Contact Hours: 40  
 Topics Covered Extensively: Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 25

**Solar Engineering**

Instructor: Neusen, K.F.  
 (414) 963-5001  
 Course Number: 330-436

Department: Engr. & Appl. Sci./Energetics  
 Credits: 3  
 Student Level: Junior or Senior  
 Duration: 15 Weeks, 3.0 hrs per week  
 Contact Hours: 45  
 Classroom: 40  
 Laboratory: 5  
 Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 18

**WISCONSIN OSHKOSH, U OF**  
**OSHKOSH, Wisconsin 54901**  
 (414) 424-1234

**SOLAR RELATED COURSES**

**Solar Energy**  
 Instructor: Passow, M. W.  
 (414) 424-4430  
 Course Number: 82-755  
 Department: Physics  
 Credits: 3  
 Student Level: College Graduate  
 Duration: 3 Weeks, 20.0 hrs per week  
 Contact Hours: 60  
 Classroom: 30  
 Laboratory: 30  
 Topics Covered Extensively: Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 16

**Solar Heating**

Instructor: Passow, M. W.  
 (414) 424-4430  
 Course Number: 82-355  
 Department: Physics  
 Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 14 Weeks, 3.0 hrs per week  
 Contact Hours: 42  
 Classroom: 42  
 Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Testing and Evaluation; Domestic Hot Water; Swimming Pool Heating; Space Heating  
 Number of Times Taught: 1  
 Average Enrollment: 18

**Solar Home Heating**

Instructor: Passow, M. W.  
 Department: Physics-Continuing Ed.  
 Student Level: All levels  
 Duration: 4 Weeks, 3.0 hrs per week  
 Contact Hours: 12  
 Classroom: 12  
 Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating.  
 Number of Times Taught: 2  
 Average Enrollment: 75

**WISCONSIN PARKSIDE, U OF**  
**KENOSHA, Wisconsin 53141**  
 (414) 553-2121

(5015)

**SOLAR RELATED COURSES****'Energy Alternatives**

Instructor: Firebaugh, Morris  
 Course Number: 67-140  
 Department: Physics  
 Credits: 1  
 Student Level: All levels  
 Duration: 5 Weeks, 3.0 hrs per week  
 Contact Hours: 15  
 Classroom: 15  
 Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Intro. to Solar Energy  
 Number of Times Taught: 6  
 Average Enrollment: 25

**WISCONSIN PLATTEVILLE, U OF**  
**PLATTEVILLE, Wisconsin 53818**  
 (608) 342-1234

(3921)

**SOLAR RELATED COURSES****Solar Heating Applications**

Instructor: Biedler, Ross A.  
 Course Number: ME 460  
 Department: Mechanical Engineering  
 Credits: 3  
 Student level: Junior or Senior  
 Duration: 16 Weeks, 3.0 hrs per week  
 Contact Hours: 48  
 Classroom: 48  
 Topics Covered Extensively: Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating

**WISCONSIN STEVENS PTN, U OF**  
**STEVENS POINT, Wisconsin 54481**  
 (715) 346-0123

(3924)

**SOLAR RELATED COURSES**

**Energy in Today's World**  
 Instructor: Taylor, Allen G.  
 Course Number: 100  
 Department: Physics  
 Credits: 3  
 Student Level: Freshman or Sophomore  
 Duration: 16 Weeks, 4.0 hrs per week  
 Contact Hours: 64  
 Classroom: 32  
 Laboratory: 32  
 Number of Times Taught: 1  
 Average Enrollment: 22

**WISCONSIN STOUT, U OF**  
**MENOMONIE, Wisconsin 54751**  
 (715) 232-0123

(3915)

**SOLAR RELATED COURSES**

**Alternative Energy**  
 Instructor: Rhoads, Charles  
 Course Number: 110-596  
 Department: Applied Science - Energy & Trans.  
 Credits: 2  
 Student Level: Junior or Senior  
 Duration: 2 Weeks, 18.0 hrs per week  
 Contact Hours: 36  
 Classroom: 36  
 Topics Covered Extensively: Alternative Energy Sources; Intro. to Solar Energy; Solar System Components; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Wind Power, Small Systems  
 Number of Times Taught: 1  
 Average Enrollment: 25

**Energy in Industry**

Instructor: Rhoads, Charles  
 Course Number: 110-101  
 Department: Industry and Technology  
 Credits: 2  
 Student Level: Freshman or Sophomore  
 Duration: 9 Weeks, 6.0 hrs per week  
 Contact Hours: 54  
 Classroom: 27  
 Laboratory: 27  
 Number of Times Taught: 20  
 Average Enrollment: 50

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**Wisconsin****Solar Energy Research Institute**

**WISCONSIN WHITEWATER, U OF  
WHITEWATER, Wisconsin 53190  
(414) 472-1234**

(3926)

**SOLAR RELATED COURSES****Residential Solar Heating**

Instructor: Shinners, Carl W.  
(414) 473-2247  
Course Number: 82/490-6903  
Department: Physics  
Credits: 3  
Student Level: College Graduate  
Duration: 2 Weeks, 30.0 hrs per week  
Contact Hours: 60  
Classroom: 20  
Laboratory: 40  
Topics Covered Extensively: Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 25

**Solar Energy Applications**

Instructor: Shinners, Carl  
(414) 472-1075  
Course Number: 82460  
Department: Physics  
Credits: 3  
Student Level: All levels  
Duration: 17 Weeks, 3.0 hrs per week  
Contact Hours: 51  
Classroom: 51  
Topics Covered Extensively: Biomass Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating; Wind Power, Small Systems  
Number of Times Taught: 6  
Average Enrollment: 40

**Solar Home Heating**

Instructor: Shinners, Carl W.  
(414) 472-1075  
Department: Physics  
Student Level: High School Graduate  
Duration: 6 Weeks, 3.0 hrs per week  
Contact Hours: 18  
Classroom: 15  
Laboratory: 3  
Topics Covered Extensively: Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 35

**Vocational/Technical Colleges**

**DISTRICT ONE TECH INST  
EAU CLAIRE, Wisconsin 54701  
(715) 836-3975**

(5304)

**SOLAR RELATED COURSES****Alternate Energy Systems**

Instructor: Dougherty, Thomas A.  
(705) 836-2828  
Department: Air Conditioning  
Technology  
Credits: 3  
Student Level: High School Graduate  
Duration: 18 Weeks, 4.0 hrs per week  
Contact Hours: 72  
Classroom: 36  
Laboratory: 36  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Home Construction; Solar Law/Legislation; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Space Heating; Space Cooling

**Solar Energy**

Department: Evening College  
Student Level: All levels  
Duration: 6 Weeks, 2.0 hrs per week  
Contact Hours: 12  
Topics Covered Extensively: Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design

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**MILWAUKEE AREA TECH C  
MILWAUKEE, Wisconsin 53203  
(414) 278-6600**

(3866)

**SOLAR RELATED COURSES**

\*Ener. Cons. & Alt. Ener. Sources.

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**MORaine PARK TECH INST  
FOND DU LAC, Wisconsin 54935  
(414) 922-8611**

(9256)

**PROGRAMS AND CURRICULA****Solar Energy**

Contact: Pasch, Rodney

(414) 922-8611  
Students Taking or Completing Offering:  
Contractor, Do-it-yourself Homeowner,  
Electrician, Plumber, Sheet Metal  
Worker

**SOLAR RELATED COURSES****Solar App. for Construction Industry**

Instructor: Pasch, Rodney  
 Course Number: 401-479  
 Department: Trade and Technical  
 Program or Curriculum: Solar Energy  
 Credits: 2  
 Student Level: All levels  
 Duration: 1 Weeks, 6.0 hrs per week  
 Contact Hours: 6  
 Topics Covered Extensively: Intro; to Solar Energy; Solar Home Construction  
 Number of Times Taught: 5  
 Average Enrollment: 80

**Solar Energy - Air Handling Systems**

Instructor: Pasch, R.  
 Course Number: 401-481  
 Department: Trade and Technical  
 Program or Curriculum: Solar Energy  
 Credits: 5  
 Student Level: All levels  
 Duration: 10 Weeks, 2.0 hrs per week  
 Contact Hours: 20  
 Classroom: 20  
 Topics Covered Extensively: Heat and Energy Transfer; Solar System Components; Space Heating  
 Number of Times Taught: 2  
 Average Enrollment: 20

**Solar Energy for Realtors**

Instructor: Pasch, R.  
 Course Number: 401-425  
 Department: Trade and Technical  
 Program or Curriculum: Solar Energy  
 Credits: 3  
 Student Level: All levels  
 Duration: 2 Weeks, 5.0 hrs per week  
 Contact Hours: 10  
 Topics Covered Extensively: Alternate Energy Sources  
 Number of Times Taught: 1  
 Average Enrollment: 40

**Solar Energy Seminar**

Instructor: Pasch, R.  
 Course Number: 401-482  
 Department: Trade and Technical  
 Program or Curriculum: Solar Energy  
 Credits: 1  
 Student Level: All levels  
 Duration: 1 Weeks, 4.0 hrs per week  
 Contact Hours: 4  
 Classroom: 4  
 Topics Covered Extensively: Alternate Energy Sources  
 Number of Times Taught: 2  
 Average Enrollment: 100

**Solar Heat & Wind**

Instructor: Pasch, Rodney  
 Course Number: 401-480  
 Department: Trade & Technical  
 Program or Curriculum: Solar Energy  
 Credits: 5  
 Student Level: All levels  
 Duration: 2 Weeks, 10.0 hrs per week  
 Contact Hours: 20  
 Topics Covered Extensively: Space Heating; Wind Power, Small Systems  
 Number of Times Taught: 5  
 Average Enrollment: 17

**Wind Energy App.**

Instructor: Pasch, R.  
 Course Number: 401-484  
 Department: Trade and Technical  
 Program or Curriculum: Solar Energy  
 Credits: 2  
 Student Level: All levels  
 Duration: 1 Weeks, 6.0 hrs per week  
 Contact Hours: 6  
 Topics Covered Extensively: Elec'l Generation, Small Scale; Wind Power, Small Systems  
 Number of Times Taught: 1  
 Average Enrollment: 40

**NORTH CENTRAL TECH INST**

WAUSAU, Wisconsin 54401  
 (715) 675-3331

(5387)

**SOLAR RELATED COURSES****Principles of Solar**

Instructor: Beckmann, Ronald  
 Course Number: 614  
 Department: Technical Education  
 Credits: 3  
 Student Level: All levels  
 Duration: 18 Weeks, 3.0 hrs per week  
 Contact Hours: 54  
 Classroom: 54  
 Topics Covered Extensively: Appropriate Technology; Energy Conservation; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar System Components; Solar Economics; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Domestic Hot Water; Space Heating; Space Cooling

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**Wisconsin****Solar Energy Research Institute**

**WAUKESHA COUNTY TECH INST**  
PEWAKEE, Wisconsin 53072  
(414) 691-3200

(19258)

**SOLAR RELATED COURSES**

**Solar Energy**  
Student Level: All levels  
Contact Hours: 12  
Classroom: 8  
Laboratory: 4  
Number of Times Taught: 2  
Average Enrollment: 37

Duration: 18 Weeks, 6.0 hrs per week  
Contact Hours: 108  
Classroom: 54  
Laboratory: 54

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Intro., to Solar Energy; Passive Solar Technology; Photovoltaics; Solar System Components; Solar Economics; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Wind Power; Small Systems

**WESTERN WIS TECH INST**  
LA CROSSE, Wisconsin 54601  
(608) 782-6238

(3840)

**SOLAR RELATED COURSES**

**Solar Energy for Homes**  
Instructor: Witt, Don  
(608) 785-9200  
Course Number: 601/164  
Department: Trade & Industry  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 12 Weeks, 3.0 hrs per week  
Contact Hours: 36  
Classroom: 35  
Topics Covered Extensively: Energy Storage; Heat and Energy Transfer; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Space Heating  
Number of Times Taught: 91  
Average Enrollment: 25

**WISCONSIN INDIAN VOCATIONAL, TECH., AND ADULT EDUCATION**  
600 North 21 Street  
Superior, Wisconsin 54880

(90140)

**PROGRAMS AND CURRICULA****Facility Engineering Technician**

Degree: AD, Engineering  
Contact: Bergstrom, Robert  
(715) 394-6677

Students Taking or Completing Offering:  
Solar Technician

**SOLAR RELATED COURSES****Evaluating Alternate Energy Sources**

Instructor: Ziesler, Anton  
(715) 394-6677  
Department: Technical Institute  
Program or Curriculum: Facility Engineering Technician  
Credits: 6  
Student Level: High School Graduate

## Colleges/Universities

**WYOMING, UNIVERSITY OF**  
LARAMIE, Wyoming 82071  
(307) 766-4121

(3932)

## SOLAR RELATED COURSES

*Alternative Sources of Energy*

Instructor: Hill, John  
(307) 766-4224

Course Number: CE692M

Department: Civil Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 35

Laboratory: 10

Topics Covered Extensively: Appropriate Technology; Energy Conversion; Energy Storage; Intro. to Solar Energy; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation; Elec'l Generation, Central; Elec'l Generation, Small Scale; Space Heating; Wind Power, Central Systems; Wind Power, Small Systems

Number of Times Taught: 3

Average Enrollment: 10

*Atmos. Sci. Prof.: Atmospheric Radiation*

Instructor: Veal, Donald L.  
(307) 766-3184

Course Number: 890M

Department: Engineering/Astroscopic Sciences

Credits: 3

Student Level: College Graduate

Duration: 13 Weeks, 3.0 hrs per week

Contact Hours: 39

Classroom: 39

Number of Times Taught: 2

Average Enrollment: 3

*Conservation of Natural Resources*

Instructor: B. Swenger, Ron  
(307) 766-4204

Course Number:

Department: Geography

Credits: 3

Student Level: Junior or Senior

Duration: 16 Weeks, 3.0 hrs per week

Contact Hours: 54

Classroom: 54

Topics Covered Extensively: Appropriate Technology

Number of Times Taught: 14

Average Enrollment: 80

*Energy Activities for Teachers I*

Instructor: Sindt, Vince  
(307) 766-4384

Course Number: NS 413M

Department: Nat. Sci.

Credits: 1

Student Level: All levels

Duration: 5 Weeks, 3.0 hrs per week

Contact Hours: 15

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Intro. to Solar Energy; Materials Research; Passive Solar Technology; Wind Power, Small Systems

Number of Times Taught: 5

Average Enrollment: 20

*Energy Activities for Teachers II*

Instructor: Sindt, Vince  
(307) 766-4384

Course Number: NS 413H

Department: Nat. Sci.

Credits: 1

Student Level: Junior or Senior

Duration: 5 Weeks, 25.0 hrs per week

Contact Hours: 45

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Conservation; Intro. to Solar Energy; Materials Research; Passive Solar Technology; Wind Power, Small Systems

Number of Times Taught: 5

Average Enrollment: 20

*Energy Conversion*

Instructor: Amr, Abdellatif  
(307) 766-6157

Course Number: 602

Department: Mechanical Engineering

Credits: 3

Student Level: Junior or Senior

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 45

Topics Covered Extensively: Alternate Energy Sources; Energy Conversion; Intro. to Solar Energy; Solar System Components

Number of Times Taught: 4

Average Enrollment: 20

*Environmental Education for Teachers*

Instructor: Beiswenger, Ron  
(307) 766-4204

Course Number: 671D

Department: Ed. Curriculum and Instruct.

Credits: 3

Student Level: Junior or Senior

Duration: 18 Weeks, 3.0 hrs per week

Contact Hours: 72

Classroom: 36

Laboratory: 36

Number of Times Taught: 5

Average Enrollment: 15

## Community/Junior Colleges

CASPER COLLEGE  
CASPER, Wyoming 82601  
(307) 268-2110

## SOLAR RELATED COURSES

## Residential Energy Conservation

Instructor: Hartman, Paul  
Course Number: 73-070  
Department: Construction Ed.  
Credits: 1  
Student Level: Freshman or Sophomore  
Duration: 10 Weeks, 1.5 hrs per week  
Contact Hours: 15  
Classroom: 15  
Number of Times Taught: 2  
Average Enrollment: 6

CENTRAL WYOMING COLLEGE  
RIVERTON, Wyoming 82501  
(307) 856-9291

## SOLAR RELATED COURSES

Solar Energy  
Instructor: Hansen, M. R.  
Course Number: ENSR 240  
Department: Life & Physical Sciences  
Credits: 1  
Student Level: Freshman or Sophomore  
Duration: 16 Weeks, 3.0 hrs per week  
Contact Hours: 48  
Classroom: 0  
Laboratory: 48  
Topics Covered Extensively: Intro. to Solar Energy; Solar Collector Evaluation/Design; Solar Systems Testing and Evaluation; Domestic Hot Water  
Number of Times Taught: 1  
Average Enrollment: 6

LARAMIE CO CHTY COLLEGE  
CHEYENNE, Wyoming 82001  
(307) 634-5853

## SOLAR RELATED COURSES

Energy and Man  
Instructor: Edwards, William C.  
Course Number: SCI103  
Department: Science  
Credits: 3  
Student Level: Freshman or Sophomore  
Duration: 18 Weeks, 3.0 hrs per week  
Contact Hours: 54  
Classroom: 40  
Topics Covered Extensively: Alternate Energy Sources; Energy Conservation  
Number of Times Taught: 2  
Average Enrollment: 12

NORTHWEST CHTY COLLEGE  
FORT WORTH, Wyoming 82435  
(307) 754-6111

## SOLAR RELATED COURSES

## Energy &amp; the Future

Instructor: Eager, John  
Course Number: 31-170  
Department: General Science  
Credits: 2  
Student Level: Freshman or Sophomore  
Duration: 17 Weeks, 2.0 hrs per week  
Contact Hours: 34  
Classroom: 34  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Heat and Energy Transfer  
Number of Times Taught: 6  
Average Enrollment: 20

## Energy from the Sun

Instructor: Eager, John  
Course Number: 34-280  
Department: Physics  
Credits: 2  
Student Level: All levels  
Duration: 17 Weeks, 2.0 hrs per week  
Contact Hours: 34  
Classroom: 24  
Laboratory: 10  
Topics Covered Extensively: Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Passive Solar Technology; Solar System Components; Solar Economics; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Space Heating  
Number of Times Taught: 1  
Average Enrollment: 20

SHERIDAN COLLEGE  
SHERIDAN, Wyoming 82801  
(307) 674-6446

(3930)

## PROGRAMS AND CURRICULUM

## Solar Energy Technology

Degree: AD Engineering Technology - Solar Option  
Contact: Ohm, Kenneth R.  
(307) 674-6446  
Students Taking or Completing Offering:  
Installer-Residential (Solar System),  
Installer-Commercial (Solar Systems),  
Solar Technician, Do-it-yourself  
Homeowner

**SOLAR RELATED COURSES****Energy Storage**

Course Number: 152

Program or Curriculum:

Solar Energy Technology

Student Level: Freshman or Sophomore

Topics Covered Extensively: Energy Storage; Photovoltaics; Wind Power; Small Systems

**Installation and Service - Solar System**

Course Number: 158

Program or Curriculum:

Solar Energy Technology

Student Level: Freshman or Sophomore

Topics Covered Extensively: Solar System Components; Solar Collector Evaluation/Design; Solar Systems Installation; Solar Systems Maintenance; Solar Systems Testing and Evaluation; Space Heating; Space Cooling

**Intro. to Solar Heat. and Cool.**

Course Number: 150

Program or Curriculum:

Solar Energy Technology

Student Level: Freshman or Sophomore

Topics Covered Extensively: Intro. to Solar Energy; Materials Research; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Elec'l Generation; Small Scale; Space Heating; Space Cooling

**Solar Collectors**

Course Number: 151

Program or Curriculum:

Solar Energy Technology

Student Level: Freshman or Sophomore

Topics Covered Extensively: Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Testing and Evaluation

**Solar Energy Fundamentals**Instructor: Ohm, Kenneth R.,  
(307) 674-6446

Course Number: 19-190

Department: Career/Tech

Program or Curriculum:

Solar Energy Technology

Credits: 3

Student Level: Freshman or Sophomore

Duration: 16 Weeks, 4.0 hrs per week

Contact Hours: 60

Classroom: 48

Laboratory: 42

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Solar Home Construction; Solar Collector Evaluation/Design; Solar Systems Design; Solar Systems Installation; Solar Systems Maintenance; Domestic Hot Water; Process Heat; Industrial; Space

Heating; Space Cooling; Wind Power; Central Systems; Wind Power, Small Systems

Number of Times Taught: 2

Average Enrollment: 35

**Solar Heating and Cooling Systems**

Course Number: 155

Program or Curriculum:

Solar Energy Technology

Student Level: Freshman or Sophomore

Topics Covered Extensively: Energy Storage; Solar System Components; Solar Collector Evaluation/Design; Solar Systems Design; Domestic Hot Water; Process Heat; Agricultural; Process Heat, Industrial; Space Heating; Space Cooling

**Wind Systems**

Course Number: 153

Program or Curriculum:

Solar Energy Technology

Student Level: Freshman or Sophomore

Topics Covered Extensively: Wind Power; Central Systems; Wind Power, Small Systems

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**WESTERN WYO CHTY COLLEGE**

(3933)

ROCK SPRINGS, Wyoming 82901

(307) 382-2121

**SOLAR RELATED COURSES****Solar Home Planning**Instructor: Bowles, Marvin  
(307) 382-2121

Course Number: 52-299

Department: Building Trades

Credits: 3

Student Level: High School Graduate

Duration: 15 Weeks, 3.0 hrs per week

Contact Hours: 45

Classroom: 30

Laboratory: 15

Topics Covered Extensively: Alternate Energy Sources; Appropriate Technology; Biomass Conversion; Energy Conservation; Energy Conversion; Energy Storage; Heat and Energy Transfer; Intro. to Solar Energy; Photovoltaics; Plumbing Techniques; Sheet Metal Techniques; Solar System Components; Solar Home Construction; Solar Systems Design; Solar Systems Installation; Domestic Hot Water; Space Heating; Wind Power, Small Systems

Number of Times Taught: 4

Average Enrollment: 35

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